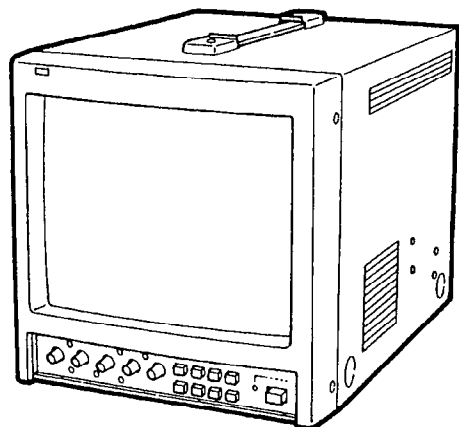


Service Manual



Colour Video Monitor
BT-S1050Y/YG

Chassis No. B10

The service technician is required to read and follow the "Safety Precautions" and "Important Safety Notice" in this service manual.

Specifications

Colour system: NTSC, PAL

Power Source: 220–240 V AC, 50/60 Hz
or 12 V DC

Power

consumption: 0.42A (220–240 V AC)
3.5A (12 V AC)

Picture tube:

25cm measured diagonally, flat-square type, 90° deflection, in-line gun, vertical line trio type (phosphor stripe pitch 0.5 mm)

Audio power

output: 1 W (monaural)

Built-in

speaker: 8 cm round ×1
impedance of 8 Ω

Effective

screen size: Width 175 mm
Height 137 mm
Diagonal 222 mm

Scanning

frequency: (H) 15.734 kHz (NTSC)
15.625 kHz (PAL)
(V) 59.94 Hz (NTSC)
50 Hz (PAL)

Horizontal

resolution: 280 TV lines or more
(Y/C input mode)

Input terminals

VIDEO A: Composite video:
1 line, BNC connector ×2,
1 Vp-p, 75 Ω, negative sync
(bridge connection possible, auto termination)

VIDEO B: Composite video:
1 line, BNC connector ×2,
1 Vp-p, 75 Ω, negative sync
(bridge connection possible, auto termination)

S-VIDEO:

1 line, mini-DIN 4-pin
connector ×2
Y: 1.0 Vp-p, 75 Ω
C: 0.286 Vp-p, 75 Ω (NTSC)
0.3 Vp-p, 75 Ω (PAL)
(bridge connection possible, auto termination)

*S-VIDEO priority when both connected

AUDIO A: 1 line (monaural), Phono pin ×2
0.5 Vrms, high-impedance
(bridge connection possible)

AUDIO B: 1 line (monaural), Phono pin ×2
0.5 Vrms, high-impedance
(bridge connection possible)

Panasonic

⚠ WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product. Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

External sync: Composite sync
1 line, BNC connector ×2
1-4 Vp-p, 75 Ω
(bridge connection possible, auto termination)

Tally/Remote: 1 line, DIN 8-pin ×1

Dimensions: Width 222 mm
Height 236 mm
Depth 317mm

Environmental conditions: Operation temperature:
0–40°C
Operation humidity:
20-80% (non-condensing)

Weight: Approx. 7.4 kg

Accessory: AC power cord
BT-S1050Y: for European
continent countries
(approx. 2 m) ×1
BT-S1050YG: for the United Kingdom
(approx. 2 m) ×1

Specifications are subject to change without notice.
Weight and dimensions shown are approximate.

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SAFETY PRECAUTIONS

1. The design of this product contains special hardware, many circuits and components specially for safety purposes. For continued protection, no changes should be made to the original design unless authorized in writing by the manufacturer. Replacement parts must be identical to those used in the original circuits. Service should be performed by qualified personnel only.
2. Alterations of the design or circuitry of the products should not be made. Any design alterations or additions will void the manufacturer's warranty and will further relieve the manufacturer of responsibility for personal injury or property damage resulting therefrom.
3. Many electrical and mechanical parts in the products have special safety-related characteristics. These characteristics are often not evident from visual inspection nor can the protection afforded by them necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in the parts list of Service manual. **Electrical components having such features are identified by shading on the schematics and by (▲) on the parts list in Service manual.** The use of a substitute replacement which does not have the same safety characteristics as the recommended replacement part shown in the parts list of Service manual may cause shock, fire, or other hazards.
4. **Don't short between the LIVE side ground and ISOLATED(NEUTRAL) side ground or EARTH side ground when repairing.**
Some model's power circuit is partly different in the GND. The difference of the GND is shown by the LIVE : (⊥) side GND, the ISOLATED(NEUTRAL) : (⏏) side GND and EARTH : (⊕) side GND. Don't short between the LIVE side GND and ISOLATED(NEUTRAL) side GND or EARTH side GND and never measure with a measuring apparatus (oscilloscope etc.) the LIVE side GND and ISOLATED(NEUTRAL) side GND or EARTH side GND at the same time.
If above note will not be kept, a fuse or any parts will be broken.
5. If any repair has been made to the chassis, it is recommended that the B1 setting should be checked or adjusted (See ADJUSTMENT OF B₁ POWER SUPPLY).
6. The high voltage applied to the picture tube must conform with that specified in Service manual. Excessive high voltage can cause an increase in X-Ray emission, arcing and possible component damage, therefore operation under excessive high voltage conditions should be kept to a minimum, or should be prevented. If severe arcing occurs, remove the AC power immediately and determine the cause by visual inspection (incorrect installation, cracked or melted high voltage harness, poor soldering, etc.). To maintain the proper minimum level of soft X-Ray emission, components in the high voltage circuitry including the picture tube must be the exact replacements or alternatives approved by the manufacturer of the complete product.
7. Do not check high voltage by drawing an arc. Use a high voltage meter or a high voltage probe with a VTVM. Discharge the picture tube before attempting meter connection, by connecting a clip lead to the ground frame and connecting the other end of the lead through a 10k Ω 2W resistor to the anode button.
8. When service is required, observe the original lead dress. Extra precaution should be given to assure correct lead dress in the high voltage circuit area. Where a short circuit has occurred, those components that indicate evidence of overheating should be replaced. Always use the manufacturer's replacement components.

9. Isolation Check (Safety for Electrical Shock Hazard)

After re-assembling the product, always perform an isolation check on the exposed metal parts of the cabinet (antenna terminals, video/audio input and output terminals, Control knobs, metal cabinet, screwheads, earphone jack, control shafts, etc.) to be sure the product is safe to operate without danger of electrical shock.

(1) Dielectric Strength Test

The isolation between the AC primary circuit and all metal parts exposed to the user, particularly any exposed metal part having a return path to the chassis should withstand a voltage of 3000V AC (r.m.s.) for a period of one second.

(. . . Withstand a voltage of 1100V AC (r.m.s.) to an appliance rated up to 120V, and 3000V AC (r.m.s.) to an appliance rated 200V or more, for a period of one second.)

This method of test requires a test equipment not generally found in the service trade.

(2) Leakage Current Check

Plug the AC line cord directly into the AC outlet (do not use a line isolation transformer during this check.). Using a "Leakage Current Tester", measure the leakage current from each exposed metal part of the cabinet, particularly any exposed metal part having a return path to the chassis, to a known good earth ground (water pipe, etc.). Any leakage current must not exceed 0.5mA AC (r.m.s.).

• Alternate Check Method

Plug the AC line cord directly into the AC outlet (do not use a line isolation transformer during this check.). Use an AC voltmeter having 1000 ohms per volt or more sensitivity in the following manner. Connect a 1500 Ω 10W resistor paralleled by a 0.15 μ F AC-type capacitor between an exposed metal part and a known good earth ground (water pipe, etc.). Measure the AC voltage across the resistor with the AC voltmeter. Move the resistor connection to each exposed metal part, particularly any exposed metal part having a return path to the chassis, and measure the AC voltage across the resistor. Now, reverse the plug in the AC outlet and repeat each measurement. Any voltage measured must not exceed 0.35V AC (r.m.s.). This corresponds to 0.5mA AC (r.m.s.).

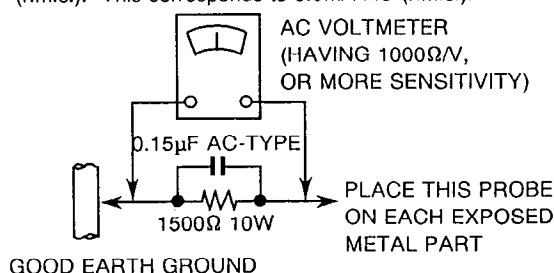


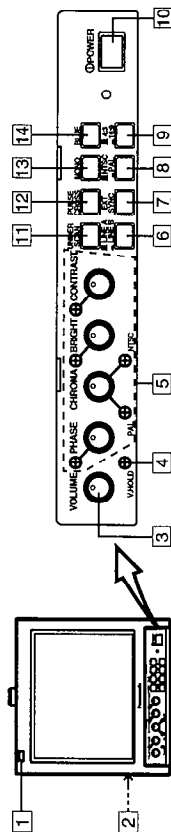
Fig.A

OPERATING INSTRUCTIONS

CONTROLS AND FEATURES

Front

<Front Panel>



1 Tally lamp

Indicates that a control signal is being received. The tally lamp functions when the control signal is input to the TALLY/REMOTE terminal on the rear panel.

2 Speaker

A built-in speaker is located inside the left side panel.

3 VOLUME control

Adjusts the speaker volume.

4 V/HOLD control

Use a small-bladed screwdriver to adjust the image's vertical stability.

5 Picture control section

PHASE, CHROMA, BRIGHT and CONTRAST controls are available.
The standard setting mode can be obtained by setting each control to the centre click position. To adjust a setting, insert a small-bladed screwdriver into the space around the knob and turn it to the desired position. When adjusting, use the small-bladed screwdriver and insert it into the control hole around the required control knob.

■ PHASE control

Adjusts picture hue.

■ CHROMA control

Adjusts picture colour density.

■ BRIGHT control

Adjusts picture brightness.

■ CONTRAST control

Adjusts picture contrast.

Notes:

The PHASE control is effective only in the NTSC colour system mode.
The standard CHROMA setting can be adjusted to suit the NTSC or PAL colour system.

10 POWER switch/POWER indicator

Press this switch to turn the power on or off.

ON () : Power is turned on and the power indicator lights.

OFF () : Power is turned off and the power indicator goes off.

Note:

If the battery expires while the monitor is operated with DC power supply (the voltage level drops), the green indicator changes to orange, then to red. When the POWER indicator changes to red, the power automatically goes off. Make sure you switch off the power before replacing the battery.

11 UNDER SCAN switch

Selects the scanning mode (over scan screen or under scan screen).

() : Over scan screen

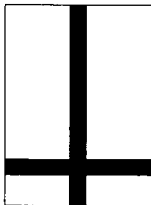
() : Under scan screen

12 PULSE CROSS switch

Checks the retrace period (sync signal) by delaying the input signal.

() : Normal screen

() : Retrace period display screen



13 MONO (colour off) switch

Selects the screen mode (colour or BW). Useful when you want to check the white balance.

() : Colour screen

() : BW screen

14 BLUE (blue check) switch

Selects the screen mode (normal or monochrome blue screen). Useful when you want to check the chroma and phase adjustment.

() : Normal screen

() : Monochrome blue screen

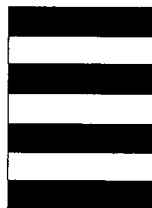
Note:

The PHASE adjustment is effective only in the NTSC colour system mode.

[How to adjust]

1. Select the monochrome blue screen mode and input colour bar signals in the order of brightness.

2. Adjust the CHROMA and PHASE controls until the density and brightness of each blue bar are the same.

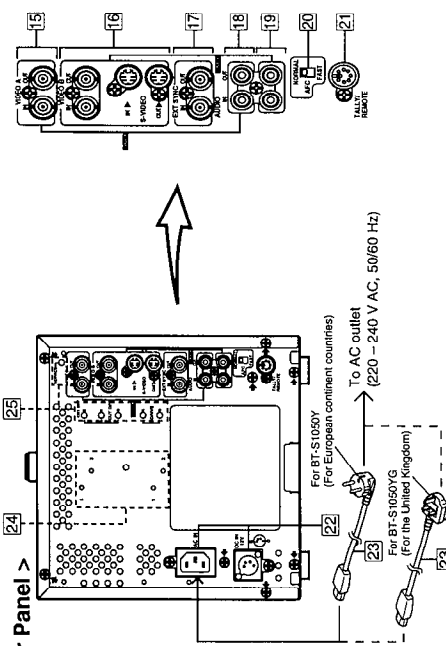


Adjust the blue bars to the same density and brightness.

CONTROLS AND FEATURES (cont'd)

Rear

< Rear Panel >



15 VIDEO A terminals

Video signal input (IN) and output (OUT) terminals. The output terminal is bridge-connected.
IN : Video signal input terminal
OUT : Bridge-connected video signal output terminal

Notes:

For corresponding audio signals, use the AUDIO A terminals [19].
Also refer to the Basic Connection Example.

16 VIDEO B terminals

Video signal input (IN) and output (OUT) terminals for both composite and S-VIDEO (Y/C) terminals. Each output terminal is bridge-connected.

[BNC terminals]

IN : Video signal input terminal
OUT : Bridge-connected video signal output terminal
[S-VIDEO (mini-DIN 4-pin) terminals]
IN : S-VIDEO (Y/C) signal input terminal
OUT : Bridge-connected S-VIDEO signal output terminal

Notes:

For corresponding audio signals, use the AUDIO B terminals [20].
S-VIDEO (Y/C) terminal has priority.
Also refer to the Basic Connection Example.

S-VIDEO terminal pin layout

Pin No.	Signal
1	GND (Y)
2	GND (C)
3	Y
4	C

17 EXT SYNC terminals

External sync signal input (IN) and output (OUT) terminals. The output terminal is bridge-connected.
IN : Input terminal for the external sync signal
OUT : Bridge-connected output terminal

Notes:

Also refer to the Basic Connection Example.

18 AUDIO A terminals

Input (IN) and output (OUT) terminals for the audio signal corresponding to the VIDEO A terminals [15]. The output terminal is bridge-connected.
IN : Audio input terminal
OUT : Bridge-connected output terminal

Notes:

For corresponding video signals, use the VIDEO A terminals [15].

19 AUDIO B terminals

Input (IN) and output (OUT) terminals for the audio signal corresponding to the VIDEO B terminals [16]. The output terminal is bridge-connected.
IN : Audio input terminal
OUT : Bridge-connected output terminal

Notes:

For corresponding video signals, use the VIDEO B terminals [16].

20 AFC switch

Selects the AFC (Automatic Frequency Control) time constant for the horizontal sync circuit.
Correct the skewed portion of the picture.
NORM position : Normal mode
FAST position : Fast mode (fast: smaller time constant)

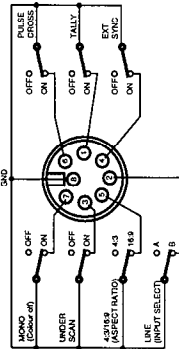
21 TALLY/REMOTE terminal

External control terminal (DIN 5-pin). Tally lamp, VIDEO AB (input selection), Under Scan, External Sync, 4:3/16:9 (aspect ratio), Pulse Cross, and MONO modes can be controlled from an external unit.

Note:

When you're controlling the monitor externally via the TALLY/REMOTE terminal, set all corresponding switches on the front panel to the OFF (■) position. (Whichever switch is pressed first has priority so remote switches may not function if the panel switches are ON (▲) position.)

TALLY/REMOTE terminal pin layout



22 Power input connector

Supply power to either the AC IN or DC IN 12 V connector.

[AC IN]

Connect the provided AC power cord between the AC IN connector and an AC outlet (220 ~ 240 V AC, 50/60 Hz).

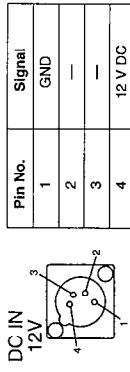
[DC IN 12V]

Connect the 12 V DC power plug to the DC IN 12V connector.

Notes:

See your dealer for more information on 12 V DC power supply.
When both AC IN and DC IN connectors are used, the AC input has priority.
The DC power supply does not automatically take over if an AC outlet is unplugged or the AC power is cut off when both AC and DC power supplies are connected. In this case, press the POWER switch to set to OFF, then press it again to turn the power ON.

DC IN 12V connector pin layout



23 Power cord

Connect the provided power cord (220 ~ 240 V AC, 50/60 Hz) to the AC IN connector.

Notes:

The BT-S1050Y power cord is for use in European continent countries.

The BT-S1050YG power cord is for use in the United Kingdom only. (The power cord for the United Kingdom has a fuse built into the plug to the AC outlet.)

24 External battery mounting holes

Attach an external battery to either pair of holes (1 or 2) to use 12 V DC power (depending on the type of battery).

Notes:

External batteries manufactured by PAG or Anton Bauer are available.

See your dealer for details.

25 Switch/control adjustment holes for service personnel

For adjustment of SERVICE switch, CUT OFF (B, R, G) control and DRIVE (R, G) control during servicing.

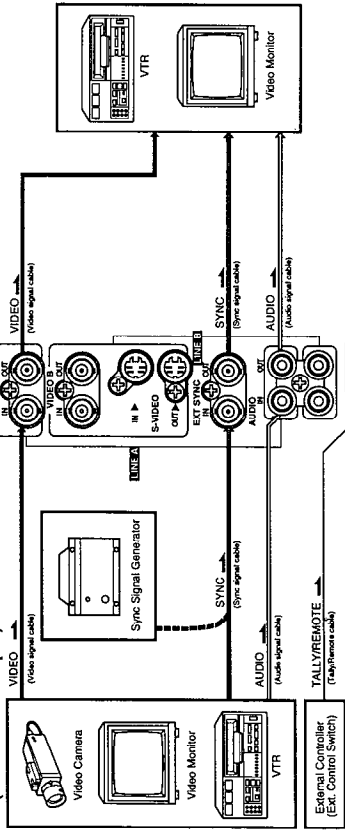
Note:

These controls are exclusively for the use of service personnel. Do not attempt to adjust them yourself.

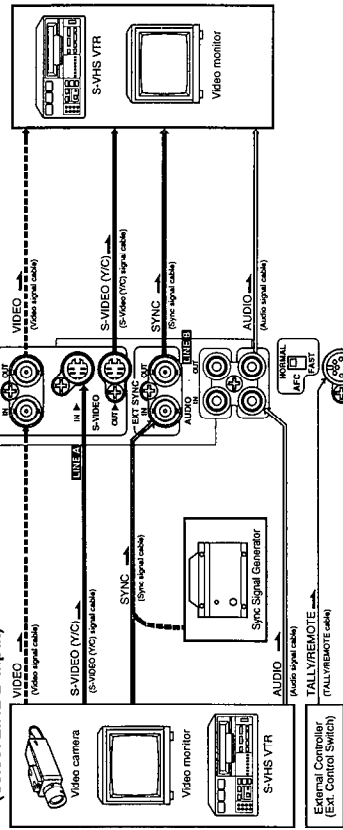
BASIC CONNECTION EXAMPLE

Before connecting your system, make sure that all units are turned off.
The illustration below shows some examples of different connections. Terminal connections may differ depending on the component connected. Be sure to refer to the instructions provided with the unit(s) you are connecting.
Each pair of input (IN) and output (OUT) terminals are bridge-connected. Do not connect input and output terminals inversely. If you're not connecting any equipment to a bridged output (OUT) terminal, be sure not to connect any other cables to the bridged output (OUT) terminal as this will cause the terminating resistance switch to open (auto terminate function).
When making a bridge connection, connect the input (IN) and output (OUT) terminals on the monitor to separate video components.
(For example, if both terminals are connected to the same VTR, resonance may occur except during playback. This is caused by the same video signal "looping" between the VTRs, and is not a malfunction.)
Select the video input (LINE A or LINE B) with the LINE A/B switch on the front panel.

LINE A Connection Example
(Select LINE A input)



LINE B Connection Example
(Select LINE B input)



TROUBLESHOOTING

Solutions to common problems related to your monitor are described here. If none of the solutions presented here solves the problem, unplug the monitor and consult a Panasonic-authorized dealer or service center for assistance.

Problems	Points to be checked	Measures
No power supply.	Is the AC or DC power plug loosened or disconnected? Is the battery fully charged (when using DC power)?	Firmly insert the power plug. Charge the battery, or replace it with a charged battery. (Refer to the instructions provided with the battery.)
No picture with the power on.	Is the video signal output from the connected component? Is the input signal selected properly?	Set the connected component correctly. Select the required video signal input with the LINE A/B switch.
No sound.	Is the video cable disconnected? Is the audio signal output from the connected component? Is the volume output set at the minimum position?	Connect the video signal cable firmly. Set the connected component correctly. Adjust the VOLUME control.
Shaking picture.	Is the audio cable disconnected? Is the monitor close to a device generating a strong magnetic field (motor, transformer, etc.)?	Connect the audio signal cable firmly. Move the device away from the monitor until the picture stabilizes.
No colour, wrong colour, or dark picture.	Is the colour system selected properly? Is the MONO (colour off) switch set properly?	Set the colour system correctly with the NTSC/PAL switch. Set the MONO (colour off) switch to the OFF (■) position.
Unnatural, irregularly coloured, or distorted picture.	Has the picture control setting (CONTRAST, BRIGHT, CHROMA or PHASE) been changed? Is the monitor close to a speaker, magnet or any other device generating a strong magnetic field?	Set each picture control to the standard setting (centre) position. Move the device away from the monitor and turn the monitor's power off. Wait at least 30 minutes, then turn the power on again.
Dark stripes at the top and bottom of the screen, picture vertically squeezed.	Is the aspect ratio set to 16:9 (⌵)?	Press the 4:3/16:9 switch to restore the normal 4:3 mode (■).
Picture flows.	Is the EXT SYNC switch set properly?	Set the EXT SYNC switch properly.
Front panel switches do not function.	Is the monitor being controlled by an external control unit via the TALLY/REMOTE terminal?	Set the control on the external unit of the same function as that on the monitor's front panel to the OFF (■) position, or disconnect the unit from the TALLY/REMOTE terminal. (See page 7 and 8.)
External control not possible with the unit connected to TALLY/REMOTE terminal.	Is the switch on the front panel of the same function as that on the external control unit to the ON (⌵) position?	Set the control on the front panel of the same function as that on the external control unit to the OFF (■) position.

The following are not malfunctions:

- When a bright still image (such as a white cloth) is displayed for a long period, it may appear to be coloured. This is due to the structure of the cathode ray tube and will be deleted when another image is displayed.
- You experience a mild electric shock when you touch the picture tube. This phenomenon is due to a normal buildup of static electricity on the CRT and is not harmful.
- The monitor emits a strange sound when the room temperature changes suddenly. This is only a problem if an abnormality appears on the screen as well.

SPECIFIC SERVICE INSTRUCTIONS

DISASSEMBLY PROCEDURE

[CAUTION]

- * Even with the power switch off, some parts of the set are live. Be sure to disconnect the power cord from the AC outlet before disassembly and reassembly.

REMOVING THE TOP COVER

1. Take out 4 screws (A) and 4 screws (B).
2. Slightly spread the bottom of the top cover. Shift the cover rearward and raise it upward to remove it.

REMOVING THE REAR PANEL

- Remove the top cover.

 1. Take out 4 screws (C).
 2. Shift the top portion of the rear panel slightly rearward and raise it upward to remove it.

REMOVING THE GUARD SHEET

- Remove the top cover and rear panel.

 1. Pull out the rivet.
 2. Shift the guard sheet upward to remove it.

REMOVING THE BOTTOM COVER

- After removing the top cover, rear panel and terminal bracket, follow the steps given below.

 1. Place the front surface downward, then stand the bottom cover while facing it toward you.
At this time, care must be exercised not to damage the front panel and CRT surface.
 2. Loosen the 2 screws marked (G) as shown in the figure.
 3. After pulling the rear panel side of the bottom cover toward you slightly, keep the chassis base from the bottom cover slightly.
 4. When the chassis base has been kept from the bottom cover slightly, pull the bottom cover upward while leaving the situation as it is, then remove the bottom cover.
 5. When the bottom cover has been removed, you can check the main PWB and control PWB in such a situation.

REMOVING THE TERMINAL BRACKET

- Remove the top cover and rear panel.

 1. Take out 2 screws (D), 7 screws (E) and 1 screw (F).
 2. Slightly shift the terminal bracket rearward and raise it upward to remove it.

REMOVING THE CHASSIS BASE WITH THE CHASSIS

- Remove the top cover.
- Remove the rear panel.

 1. Remove the claws located at the left and right sides of the bottom of the front panel toward outside.
 2. While pulling the chassis base with the chassis rearward, remove it.

REMOVING THE POWER SW

- Remove the top cover.
- Remove the rear panel.
- Remove the chassis base even with the power switch off.

 1. Take out the screw (H).
 2. Remove the POWER SW sheet.
 3. Press the claws (Y) and (Z) to detach the POWER SW 2 PWB. Then slightly raise the POWER SW 2 PWB.
 4. The POWER SW 1 PWB can be removed by raising it after pressing the claws (X). (see Fig. 1)

REMOVING CONTROL PWB

- Remove the top cover.
- Remove the rear panel.
- Remove the chassis base.

 1. The CONTROL PWB can be removed by simply raising it.

REMOVING THE CRT

- Remove the top cover.
- Remove the rear panel.
- Remove the chassis base.

 1. Take out 4 screws (K).
 2. Remove the CRT from the front panel.

REMOVING THE SPEAKER

- Remove the top cover.
- Remove the rear panel.
- Remove the terminal bracket.

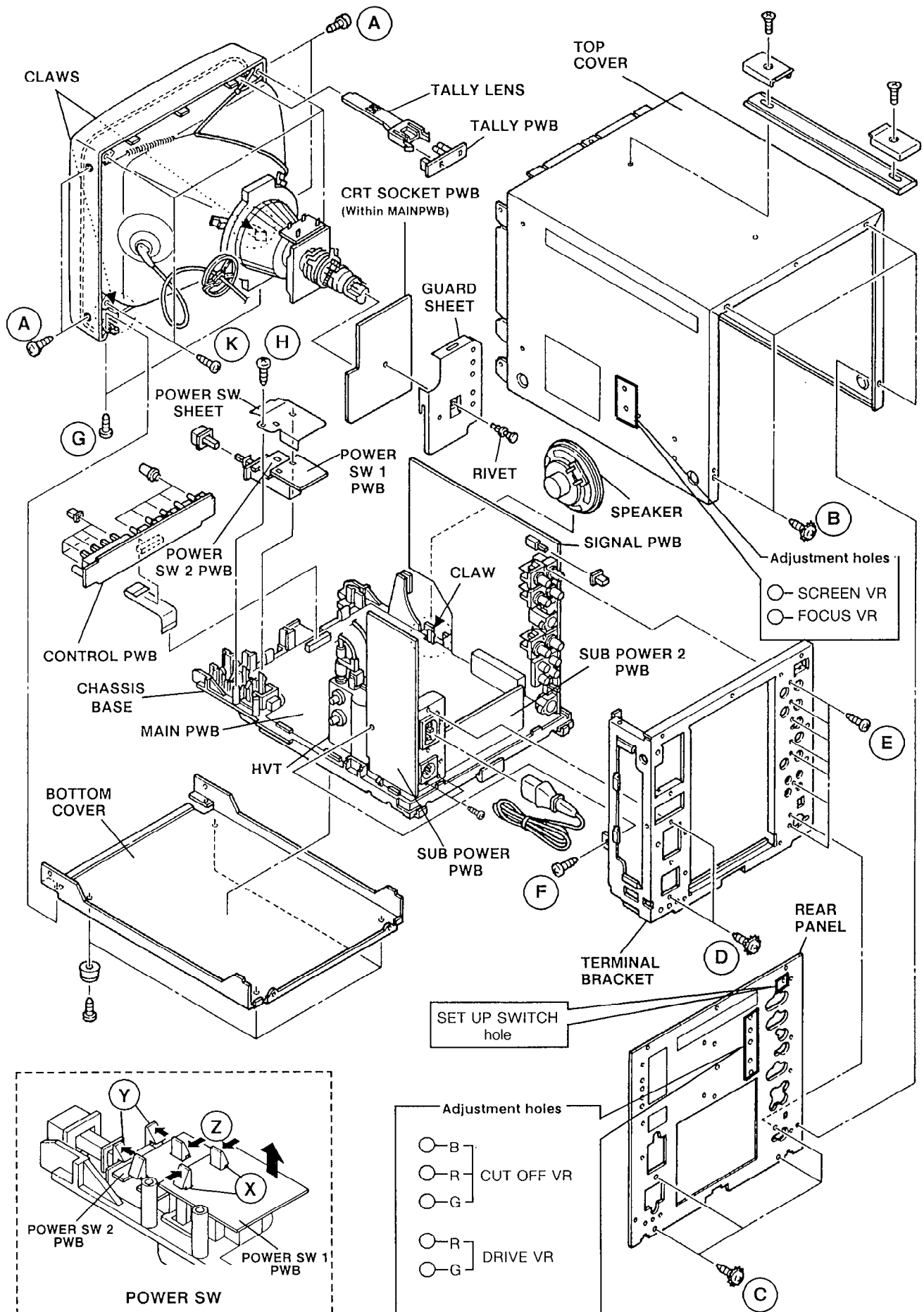
 1. Remove the speaker code from the speaker.
 2. Remove the signal PWB.
 3. Disengage the claw under the speaker.
 4. Pull up the speaker.

[CAUTION]

- * When erecting the chassis, be careful so that there will be no contacting with other PW board.
- * Before turning on power, make sure that the wire connector, CRT earth wire and other connectors properly connected.

WIRE CLAMPING AND CABLE TYING

1. Be sure to clamp the wire.
2. Never remove the cable tie used for tying the wires together. Should it be inadvertently removed, be sure to tie the wires with a new cable tie.



REPLACEMENT OF CHIP COMPONENT

CAUTIONS

1. Avoid heating for more than 3 seconds.
2. Do not rub the electrodes and the resist parts of the pattern.
3. When removing a chip part, melt the solder adequately.
4. Do not reuse a chip part after removing it.

SOLDERING IRON

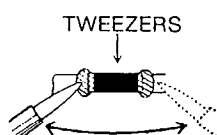
1. Use a high insulation soldering iron with a thin pointed end of it.
2. A 30w soldering iron is recommended for easily removing parts.

REPLACEMENT STEPS

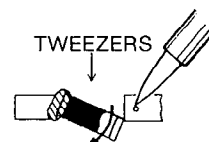
1. How to remove Chip parts

- Resistors, capacitors, etc

- (1) As shown in the figure, push the part with tweezers and alternately melt the solder at each end.

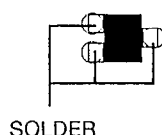


- (2) Shift with tweezers and remove the chip part.

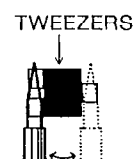


- Transistors, diodes, variable resistors, etc

- (1) Apply extra solder to each lead.



- (2) As shown in the figure, push the part with tweezers and alternately melt the solder at each lead. Shift and remove the chip part.

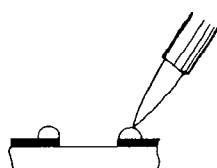


Note: After removing the part, remove remaining solder from the pattern.

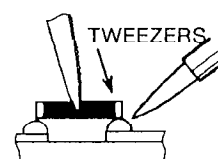
2. How to install Chip parts

- Resistors, capacitors, etc

- (1) Apply solder to the pattern as indicated in the figure.



- (2) Grasp the chip part with tweezers and place it on the solder. Then heat and melt the solder at both ends of the chip part.



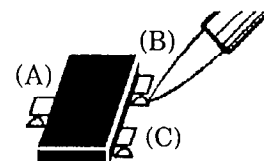
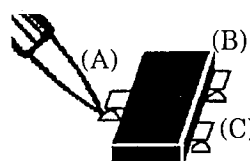
- Transistors, diodes, variable resistors, etc

- (1) Apply solder to the pattern as indicated in the figure.

- (2) Grasp the chip part with tweezers and place it on the solder.

- (3) First solder lead A as indicated in the figure.

- (4) Then solder leads B and C.



SERVICE ADJUSTMENTS

PRIOR TO STARTING ADJUSTMENT

1. Supply power to the set and measuring instruments and allow to warm up for at least 30 minutes.
2. Confirm the proper AC power voltage is being supplied.
3. Use care not to disturb controls and switches not mentioned in the adjustment items.
4. Refer to adjustment settings and set user operated controls (bright, contrast, chroma, etc.) to the indicated positions.

TOOLS AND FIXTURES FOR ADJUSTMENT

- DC voltmeter (digital voltmeter)
- Oscilloscope
- Signal generator (PAL / NTSC systems)
 - Colour bar and split colour bar patterns
 - Crosshatch pattern
 - Cross pattern
 - Red raster pattern
 - Green raster pattern
 - Blue raster pattern
 - Phillips pattern (including R-Y and B-Y)
 - TV resolution pattern
- Colour analyzer

ADJUSTMENT SETTINGS

1. Front controls		3. Rear SW	
CONTRAST	Center click position	AFC	NORMAL
BRIGHT	Center click position	SERVICE	OFF
CHROMA	Center click position		
PHASE	Center click position		
VOLUME	Center		
2. Front SW			
UNDER SCAN	OFF		
PULSE CROSS	OFF		
COLOR OFF → MONO	OFF		
BLUE CHECK → BLUE	OFF		
INPUT A/B → LINE A/B	A		
EXIT SYNC → EXT SYNC	OFF		
NTSC / PAL	PAL		
4:3 / 16:9	4:3		

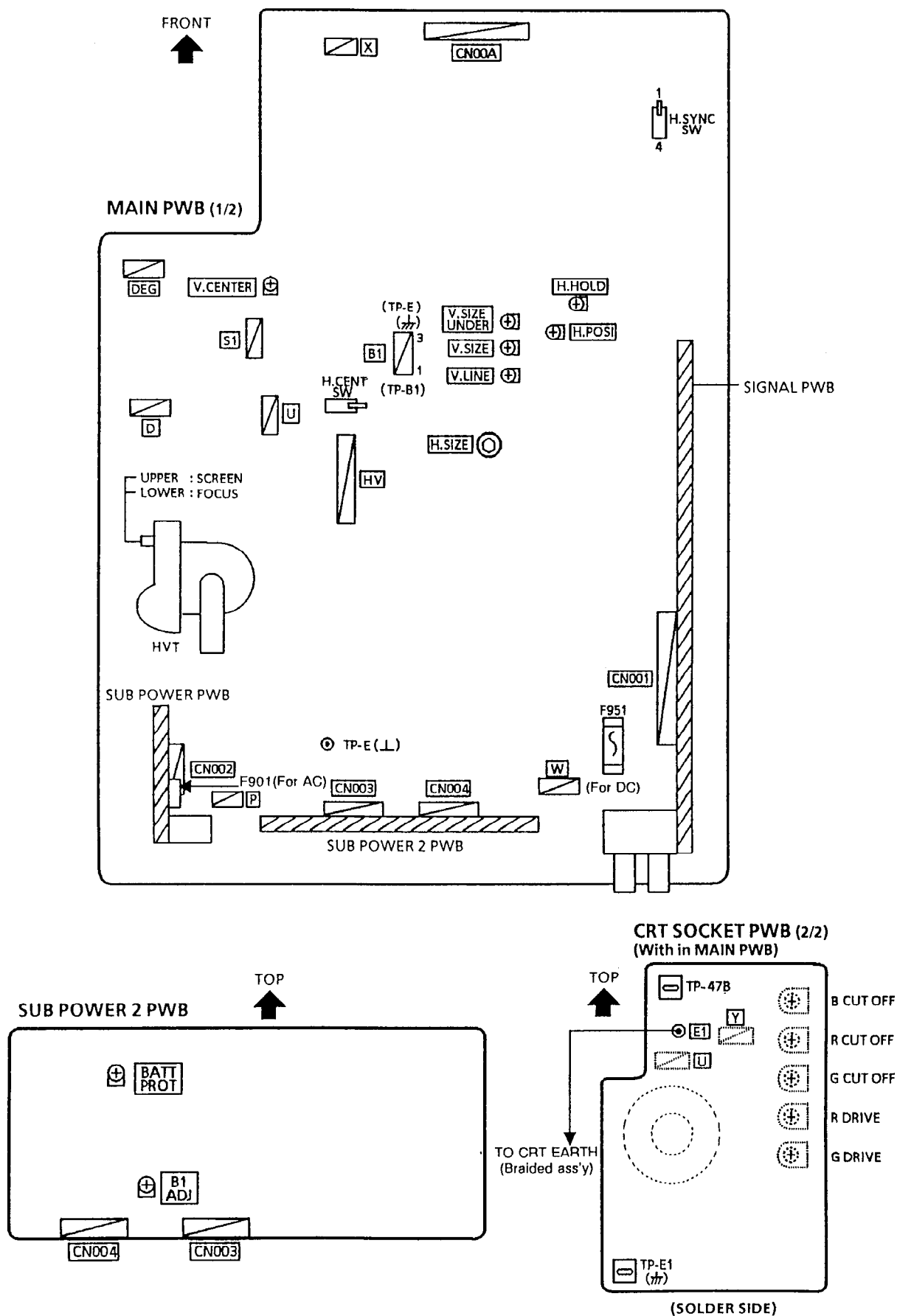
FOCUS, SCREEN, CUT OFF AND DRIVE, SERVICE SWITCH ADJUSTMENT HOLES

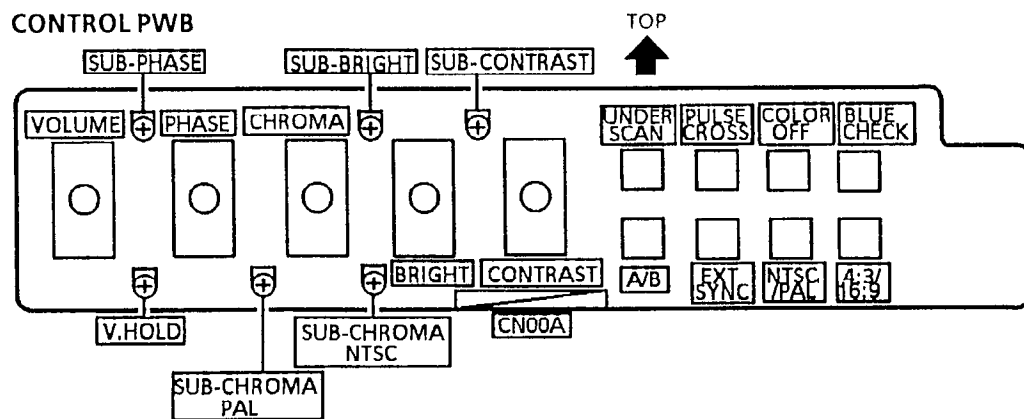
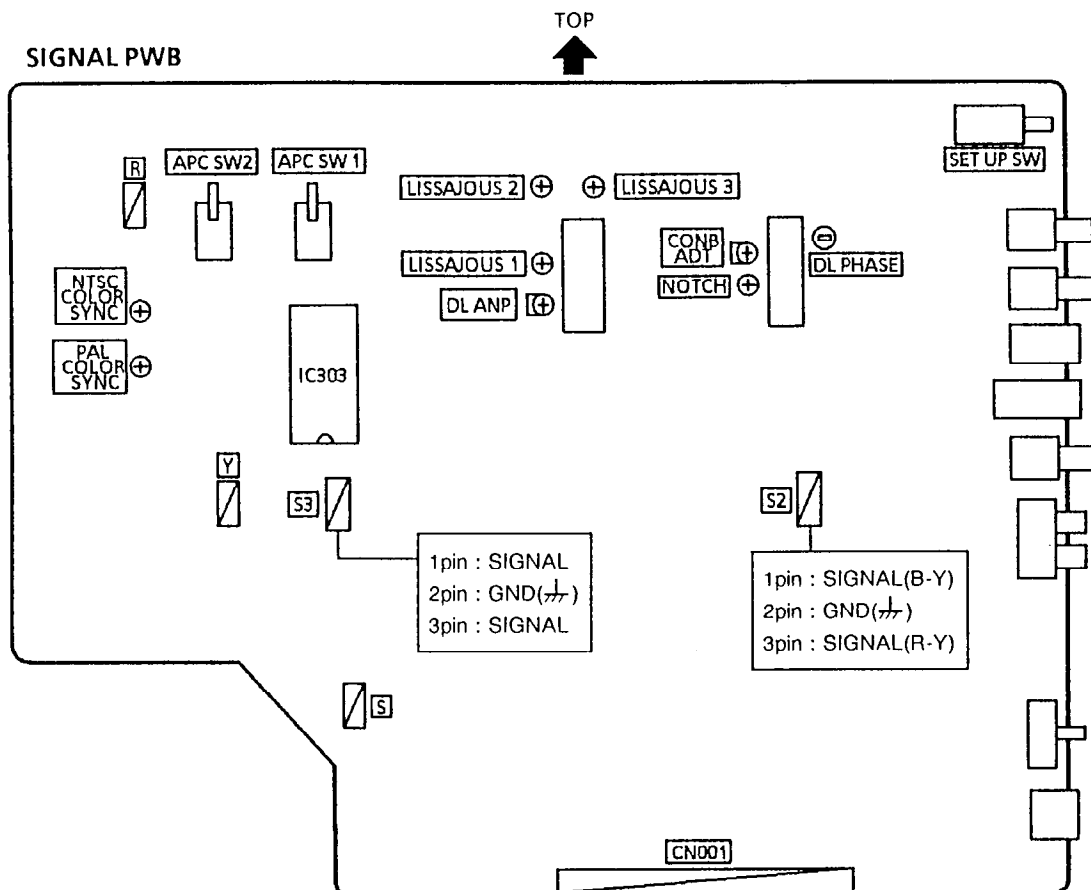
- The Focus and Screen adjustment holes are on the side of the set (see Page 5).
- The Cut off and Drive adjustment holes are on the rear panel of the set (see Page 5).
- The SERVICE SWITCH hole is on the rear panel of the set (see page 5).

[CAUTION]

Be sure to use a non-metallic screwdriver for adjusting there VRs. A metallic driver can cause damage by shorting.

ADJUSTMENT LOCATIONS

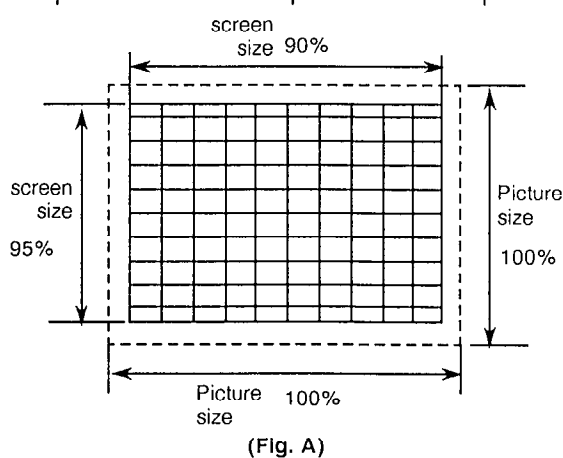




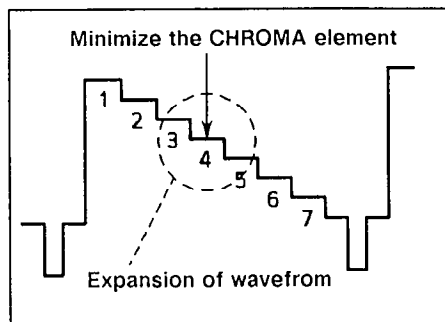
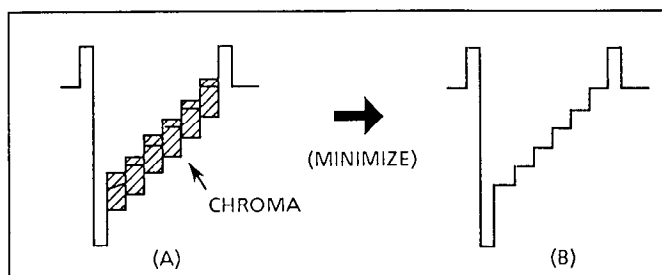
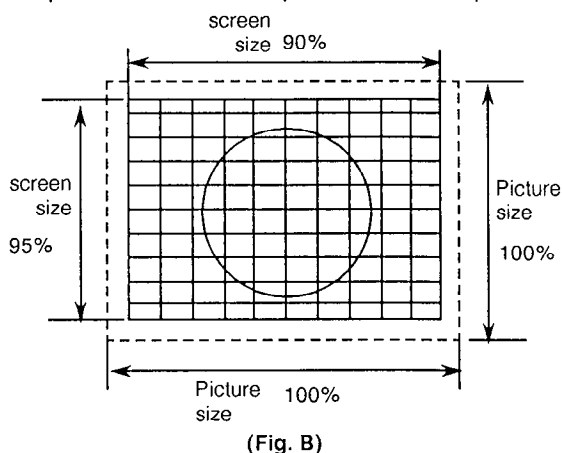
ADJUSTING STEP

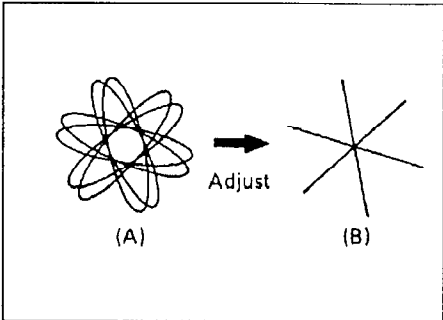
Item	Test equipment	Test points	Adjustment locations	Adjustment procedure
B1 voltage check (AC)	DC Voltmeter Signal generator	TP-B1(1 pin) TP-E(⚡)(3 pin) [B1 connector in MAIN PWB]		<ul style="list-style-type: none"> Make sure that input power is 230V AC, 50Hz. <ol style="list-style-type: none"> Input an all-black signal. Confirm DC $114.8V \begin{smallmatrix} +1.0V \\ -1.3V \end{smallmatrix}$ between TP-B1 and TP-E(⚡).
B1 voltage check (DC)	DC Voltmeter Signal generator	TP-B1 (1 pin) TP-E(⚡)(3 pin) [B1 connector in MAIN PWB]	B1 ADJ VR [SUB POWER 2 PWB]	<ul style="list-style-type: none"> Make sure that input power is $13V \pm 0.1V$ DC. <ol style="list-style-type: none"> Input an all-black signal. Connect DC voltmeter TP-B1 and TP-E(⚡). Turn the B1 ADJ VR from rearward and bring B1 voltage to DC $114.8V \pm 0.1V$. Make sure that the B1 voltage is DC $114.8V \begin{smallmatrix} +1.0V \\ -1.3V \end{smallmatrix}$ when the DC power supply voltage has been changed in the range of 10.4V~18.0V. <ul style="list-style-type: none"> Don't use metal screw driver.
DC Shut off voltage adjustment	DC Voltmeter Signal generator		BATT. PROT VR [SUB POWER 2 PWB]	<ul style="list-style-type: none"> Turn the BATT.PROT VR fully clock wise from rearward in advance. Make sure that input power is $12V \pm 0.1V$ DC. <ol style="list-style-type: none"> Input an all-black signal. Connect digital voltmeter to DC terminal. Adjust DC power supply voltage bring to DC $10.3 \pm 0.01V$ (digital volt mete measured). Slightly turn the BATT.PROT VR counter-clock wise until power shut off. (POWER LED red lights) Turn on the power again and make sure that the POWER LED indicates a green color when the input power is 12V. <p>※ When regaining the power supply, slightly increase the output voltage of the DC power supply, then turn the main switch of the TV set OFF before turning it ON again.</p>
Focus adjustment	Signal generator		FOCUS VR [HVT]	<ol style="list-style-type: none"> Input a crosshatch signal. Turn the FOCUS VR to the range of best focus of the crosshatch signal.
H.HOLD adjustment	Signal generator		H.SYNC SW H.HOLD VR [MAIN PWB]	<ol style="list-style-type: none"> Input a monoscope pattern signal. Turn H.SYNC SW to left (4) side. Adjust the H.HOLD VR so that the monoscope pattern turn to normal in the screen. Turn H.SYNC SW to right side. Make sure that the normal picture can be displayed on the CRT immediately when the input select A / B SW was changed. Repeat the steps 2~4 above, if necessary.

Item	Test equipment	Test points	Adjustment locations	Adjustment procedure
V.HOLD adjustment	Signal generator		V.HOLD VR [FRONT PANEL]	<ol style="list-style-type: none"> 1. Input a NTSC colour bar signal. 2. Switch the NTSC / PAL SW on the front panel to the PAL side and the 4:3 / 16:9 SW on the front panel to the 16:9 side. (At this time, make sure that the colour in the picture on the CRT has died away and the vertical amplitude has been diminished in size.) 3. Turn the V.HOLD VR on the front panel clockwise from its minimum position and stop it at the position where the vertical synchronization has been obtained. 4. Return the NTSC / PAL SW to the NTSC side and the 4:3 / 16:9 SW to the 4:3 side, respectively, and make sure that the picture condition on the CRT is normal. On each mode (PAL, NTSC, UNDER SCAN, 16:9, etc.), confirm that the picture condition on the CRT is normal.
H. Size and H. Center adjustment	Signal generator		H. SIZE COIL H. POSI VR H. CENT SW [MAIN PWB]	<ul style="list-style-type: none"> • Perform after completing brightness and contrast adjustments. <ol style="list-style-type: none"> 1. Input a NTSC crosshatch signal. 2. Press the UNDER SCAN SW and the PULSE CROSS SW on the front panel, then roughly adjust the H. CENT SW to center the picture on the CRT. (At the same time, input PAL crosshatch signal and make sure that the center has not got out of place excessively.) 3. After turning off the UNDER SCAN SW and the PULSE CROSS SW, adjust the H. POSI VR to center the picture on the CRT. 4. Adjust the H. SIZE COIL to set the horizontal size to 90% (Fig. A) 5. Turn on the UNDER SCAN SW and set the BRIGHT VR to a maximum and the CONTRAST VR to a minimum. Then, adjust the H.POSI VR so that the picture area on the CRT is positioned at the center of the raster. 6. Turn off the UNDER SCAN SW and set the BRIGHT VR and the CONTRAST VR to the click position. Then, make sure that the horizontal position falls within the tolerance. If the horizontal position has been out of place, adjust the H.CENT SW to correct the position.

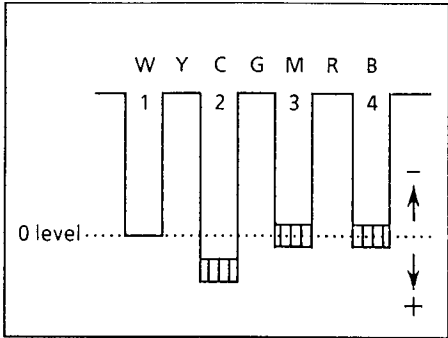
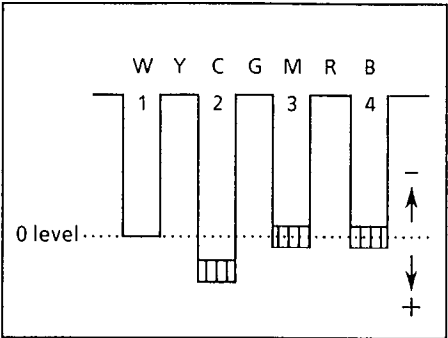


Item	Test equipment	Test points	Adjustment locations	Adjustment procedure
V. Size V. Center and V. Linearity adjustment	Signal generator		V. SIZE VR V. CENTER VR V. LIN VR [MAIN PWB]	<ul style="list-style-type: none"> Perform after completing brightness and contrast adjustments. <ol style="list-style-type: none"> Input a NTSC crosshatch circle signal. Adjust vertical linearity with the V. LIN VR. Adjust the V. CENTER VR to center the Picture on the CRT. Adjust the V. SIZE VR to set the vertical size to 95% (Fig. B). If necessary, readjust the V. LIN VR. Press the UNDER SCAN SW and adjust the V. SIZE UNDER VR so that circle on the screen becomes the same diameter vertically and horizontally. Input the PAL crosshatch circle signal and make sure that the vertical size of the circle falls within 92~97% when the UNDER SCAN SW is turned off, and that the diameter of the circle is the same vertically and horizontally when the UNDER SCAN SW is turned ON.
Notch circuit adjustment	Signal generator Oscilloscope	[S2] connector 1&3 pin : Signal 2 pin : GND(⚡) [SIGNAL PWB]	NOTCH [SIGNAL PWB]	<ol style="list-style-type: none"> Input a PAL colour bar signal. Switch the NTSC / PAL SW on the front panel to the PAL side. Connect an oscilloscope to [S2] connector 1 or 3 pin. Adjust the NOTCH so that the figure is altered to (B) from (A).
COMB FILTER adjustment	Signal generator Oscilloscope	[S2] connector 1&3 pin : Signal 2 pin : GND(⚡) [SIGNAL PWB]	DL PHASE TRANSF COMB A.D.J [SIGNAL PWB]	<ol style="list-style-type: none"> Input a NTSC colour bar signal. Switch the NTSC / PAL SW on the front panel to the NTSC side. Connect the oscilloscope to [S2] connector. In case the waveform can be expanded by the oscilloscope, expand the waveform to allow easy adjustment. Adjust the DL PHASE TRNASF so that the CHAROMA element becomes minimum. With the COMB A.D.J , adjust the CHAROMA element so that the element becomes minimum. Repeat steps 3 and 4.



Item	Test equipment	Test points	Adjustment locations	Adjustment procedure
COLOUR SYNC adjustment	Signal generator Oscilloscope		APC SW 1 & 2 NTSC COLOUR SYNC [SIGNAL PWB]	<ol style="list-style-type: none"> 1. Input a NTSC colour bar signal. 2. Switch the NTSC / PAL SW on the front panel to the NTSC side. 3. Switch the APC SW 1 & 2 to the S side. 4. While adjusting the NTSC COLOR SYNC, observe the picture in the screen : then stop the adjustment when the picture has been changed to a complete color-bar pattern from a striped pattern. 5. Then return the APC SW 1 & 2 to the N side. 6. By switching the input select A / B SW twice, make sure that the complete colour-bar pattern obtained in the step 4 above will appear immediately.
APC adjustment	Signal generator Oscilloscope	S3 connector 1 pin : SIGNAL(B-Y) 2 pin : GND($\overline{\text{---}}$) 3 pin : SIGNAL(R-Y)	APC SW 1 & 2 DL LEVEL VR LISSAJOUS 2 & 3 [SIGNAL PWB]	<ol style="list-style-type: none"> 1. Input a PAL colour bar signal. 2. Switch the NTSC / PAL SW on the front panel to the PAL side. 3. Connect the probes of a dual-trace oscilloscope to S3 connector. 4. Set the APC SW 1, SW 2 to S. 5. Set the oscilloscope tie axis to X-Y coordinates. 6. Alternately adjust the DL LEVEL VR and LISSAJOUS 2 & 3 to obtain the waveform B indicated in the figure. 7. Return the APC SW1, SW2 to N.
				
White balance (low Light) adjustment	Signal generator		SERVICE SW [SIGNAL PWB] R CUT OFF VR G CUT OFF VR B CUT OFF VR [CRT SOCKET PWB] SCREEN VR [MAIN PWB]	<ol style="list-style-type: none"> 1. Input a monoscope pattern signal. 2. Set the SET UP SWITCH on the signal PWB to S to produce a single horizontal line. 3. Turn the RED, GREEN and BLUE CUT OFF VRs fully counter-clockwise. 4. Turn the SCREEN VR fully counter-clockwise, then gradually turn it clockwise until a single blue, green or red horizontal line just slightly appears. 5. Turn the CUT OFF VR corresponding to the initial colour slightly clockwise. 6. Adjust the CUT OFF VRs of the other two colors to where the three overlapped colors appear white. 7. Return the SET UP SWITCH to normal(N). 8. Set for a dark screen and fine adjust the R, G and B CUT OFF VRs to obtain the optimum white colour.

Item	Test equipment	Test points	Adjustment locations	Adjustment procedure
White balance (high light) adjustment	Signal generator (colour temperature meter)		R DRIVE VR G DRIVE VR [CRT SOCKET PWB]	<ol style="list-style-type: none"> 1. Input a monoscope pattern signal. 2. Adjust the RED and GREEN DRIVE VRs to produce an overall white screen. <ul style="list-style-type: none"> • If a colour temperature meter is available : Measure the center of the screen with the sensor of the colour temperature meter. Adjust the RED and GREEN DRIVE VRs to obtain D6500° K. 3. Turn the contrast and brightness VRs. Confirm correct white balance tracking from low light to high light.
Brightness adjustment	Signal generator		SUB BRIGHT VR [CONTROL PWB]	<ul style="list-style-type: none"> • Perform after completing white balance adjustments. <ol style="list-style-type: none"> 1. Input a split colour bar signal. 2. Adjust the SUB BRIGHT VR to eliminate illumination in the 0% black component.
Contrast adjustment	Signal generator Oscilloscope	TP-47B TP-E(⚡) [CRT SOCKET PWB]	SUB CONT. VR [CONTROL PWB]	<ol style="list-style-type: none"> 1. Input a colour bar signal (set for 0.525V between black and white). 2. Connect an oscilloscope to TP-47B and TP-E(⚡). 3. Adjust the SUB CONTRAST VR to set the level indicated in the figure to 21V.

Item	Test equipment	Test points	Adjustment locations	Adjustment procedure
Chroma adjustment	Signal generator Oscilloscope	TP-47B TP-E1(↗) [CRT SOCKET PWB]	SUB CHROMA VR [CONTROL PWB]	<ol style="list-style-type: none"> 1. Input a PAL colour bar signal. 2. Switch the NTSC / PAL SW on the front panel to the PAL side. 3. Connect an oscilloscope to TP-47B and TP-E1 (↗). 4. With the no. 1 level W taken as 0 level, adjust the SUB CHROMA (PAL) VR to set no. 4 B to 0 level.
				
COLOUR TINT adjustment	Signal generator Oscilloscope	TP-47B TP-E(↗) [CRT SOCKET PWB]	SUB PHASE VR SUB CHAROMA VR [CONTROL PWB]	<ol style="list-style-type: none"> 1. Input a NTSC colour bar signal. 2. Switch the NTSC / PAL SW on the front panel to the PAL side, and turn the BLUE CHECK SW on. 3. Connect an oscilloscope to TP-47B and TP-E (↗). 4. With the no. 1 level W taken as 0 level, adjust the SUB PHASE VR to set no. 3 M to 0 level. 5. With the no. 1 level W taken as 0 level, adjust the SUB CHROMA (NTSC) VR to set no. 4 B to 0 level.
				

PURITY, CONVERGENCE

PURITY ADJUSTMENT

Before adjusting :

- Turn the screen VR to where the raster dose not appear.
- Set the PULSE CROSS SW to ON and turn BRIGHT VR to MAX, allow to run for at least 30 minutes, then return the switch to OFF and BRIGHT VR to back.
- Set the screen VR to the original position.

1. Demagnetize CRT with the demagnetizer.
2. Loosen the retainer screw of the deflection yoke.
3. Remove the wedge.
4. Input a Green Raster signal from the Signal Generator, and turn the screen to Green Raster.
5. Move the deflection yoke backward.
6. Bring the long lug of the purity magnets on the short lug and position them horizontally. (Fig. 3)
7. Adjust the gap between two lugs so that the Green Raster will come into the center of the screen. (Fig. 4)
8. Move the deflection yoke forward, and fix the position of the deflection yoke so that the whole screen will become green.
9. Insert the wedge to the top side of the deflection yoke so that it will not move.
10. Input a crosshatch signal.
11. Verify that the screen is horizontal.
12. Input red and Blue Raster signals, and make sure that purity is properly adjusted.

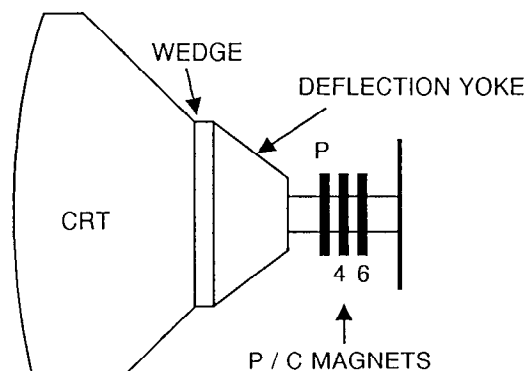


Fig. 1

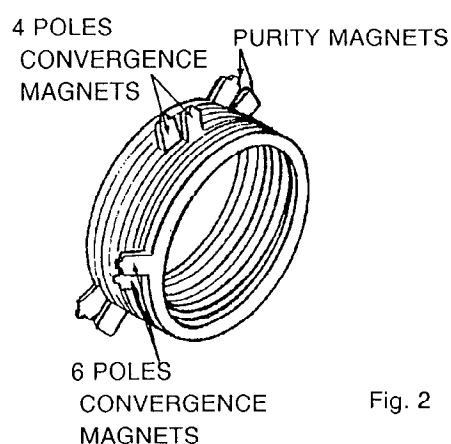


Fig. 2

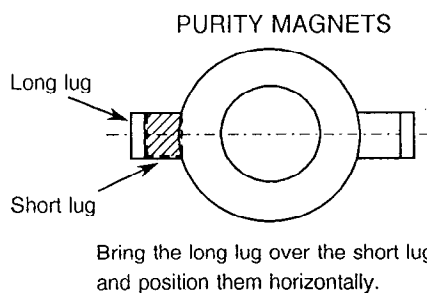


Fig. 3

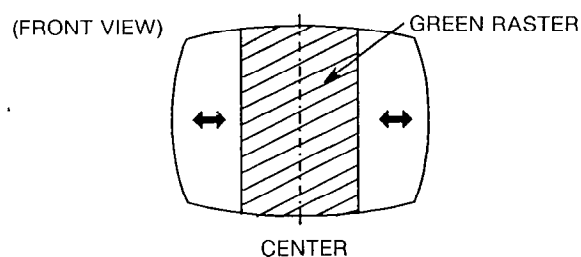


Fig. 4

STATIC CONVERGENCE ADJUSTMENT

1. Input a crosshatch signal.
2. Using 4-pole convergence magnets, overlap the red and blue lines in the center of the screen and turn them to magenta (red/blue).
3. Using 6-pole convergence magnets, overlap the magenta (red/blue) and green lines in the center of the screen and turn them to white.
4. Repeat 2 and 3 above, and make best convergence.

DYNAMIC CONVERGENCE ADJUSTMENT

1. Move the deflection yoke up and down and overlap the lines in the periphery. (Fig. 2)
2. Move the deflection yoke left to right and overlap the lines in the periphery. (Fig. 3)
3. Repeat 1 and 2 above, and make best convergence.

- After adjustment, fix the wedge at the original position.
Fasten the retainer screw of the deflection yoke.
Fix the 6 magnets with glue.

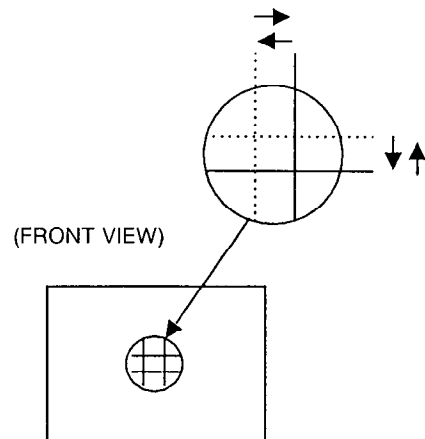


Fig. 1

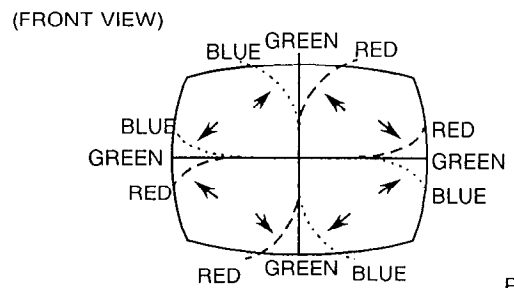


Fig. 2

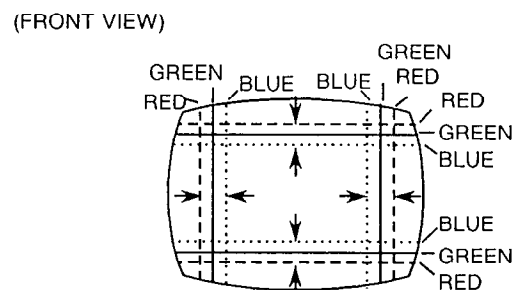



Fig. 3

Schematic Diagram for Model BT-S1050Y/YG

■NOTE ON USING CIRCUIT DIAGRAMS

1.SAFETY

The components identified by the  symbol and shading are critical for safety. For continued safety replace safety critical components only with manufactures recommended parts.

2.SPECIFIED VOLTAGE AND WAVEFORM VALUES

The voltage and waveform values have been measured under the following conditions.

- (1)Input signal :Colour bar signal
 - (2)Setting positions
of each knob/button
and variable resistor :Original setting position
when shipped
 - (3)Internal resistance of tester :DC 20k Ω /V
 - (4)Oscilloscope sweeping time :H \Rightarrow 20 μ S/div
:V \Rightarrow 5mS/div
:Others \Rightarrow Sweeping time is
specified
 - (5)Voltage values :All DC voltage values
- * Since the voltage values of signal circuit vary to some extent according to adjustments, use them as reference values.

3.INDICATION OF PARTS SYMBOL[EXAMPLE]

- In the PW board :R1209 \rightarrow R209

4.INDICATIONS ON THE CIRCUIT DIAGRAM

(1)Resistors

- Resistance value

No unit :[Ω]
K :[K Ω]
M :[M Ω]

- Rated allowable power

No indication :1/6[W]
Others :As specified

- Type

No indication :Carbon resistor
OMR :Oxide metal film resistor
MFR :Metal film resistor
MPR :Metal plate resistor
UNFR :Uninflammable resistor
FR :Fusible resistor

- * Composition resistor 1/2 [W] is specified as 1/2S or Comp.

(2)Capacitors

- Capacitance value

1or higher :[pF]
less than 1 :[μ F]

- Withstand voltage

No indication :DC50[V]
Others :DC withstand voltage[V]
AC indicated :AC withstand voltage[V]

- * Electrolytic Capacitors

47/50[Example]:Capacitance value[μ F]/withstand voltage[V]




- Type

No indication :Ceramic capacitor
MY :Mylar capacitor
MM :Metalized mylar capacitor
PP :Polypropylene capacitor
MPP :Metalized polypropylene capacitor
MF :Metalized film capacitor
TF :Thin film capacitor
BP :Bipolar electrolytic capacitor
TAN :Tantalum capacitor

(3)Coils



No unit :[μ H]
Others :As specified

(4)Power Supply


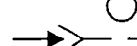

 :B1
 :B2(12V)
 :5V

- * Respective voltage values are indicated.





(5)Test Point

 : Test point
 : Only test point display



(6)Connecting method

 : Connector
 : Wrapping or soldering
 : Receptacle

(7)Ground symbol

 : LIVE side ground
 : ISOLATED(NEUTRAL) side ground
 : EARTH ground
 : DIGITAL ground

5.NOTE FOR REPAIRING SERVICE

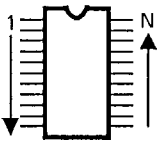
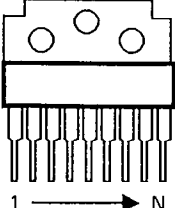
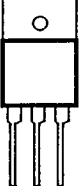
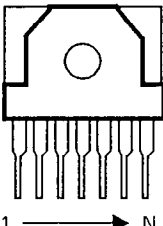
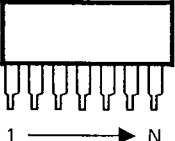
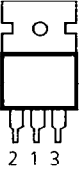
This model's power circuit is partly different in the GND. The difference of the GND is shown by the LIVE : () side GND and the ISOLATED(NEUTRAL) : () side GND. Therefore, care must be taken for the following points.

- (1) Do not touch the LIVE side GND or the LIVE side GND and the ISOLATED(NEUTRAL) side GND simultaneously. If the above caution is not respected, an electric shock may be caused. Therefore, make sure that the power cord is surely removed from the receptacle when, for example, the chassis is pulled out.
- (2) Do not short between the LIVE side GND and ISOLATED(NEUTRAL) side GND or never measure with a measuring apparatus (oscilloscope, etc.) the LIVE side GND and ISOLATED(NEUTRAL) side GND at the same time. If the above precaution is not respected, a fuse or any parts will be broken.


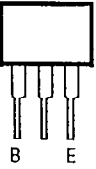
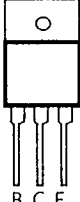
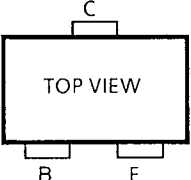
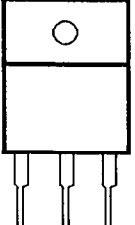
- ◇ Since the circuit diagram is a standard one, the circuit and circuit constants may be subject to change for improvement without any notice.

SEMICONDUCTOR SHAPES

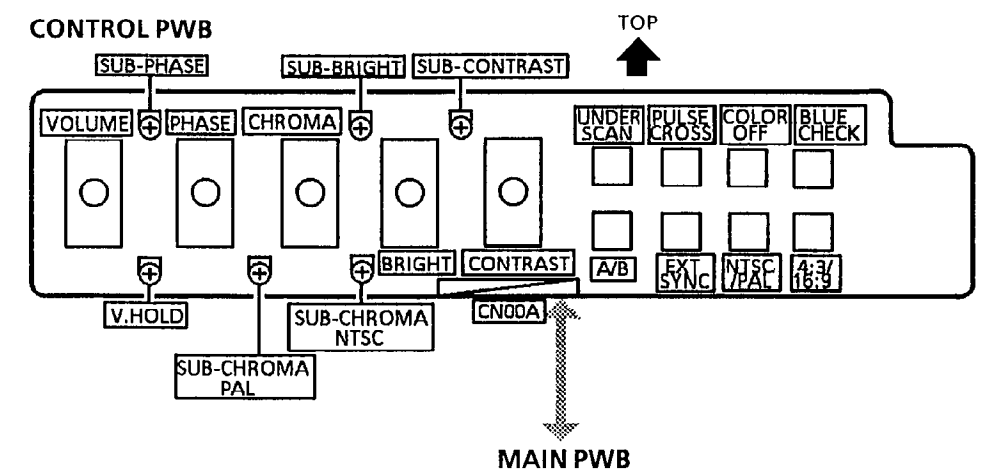
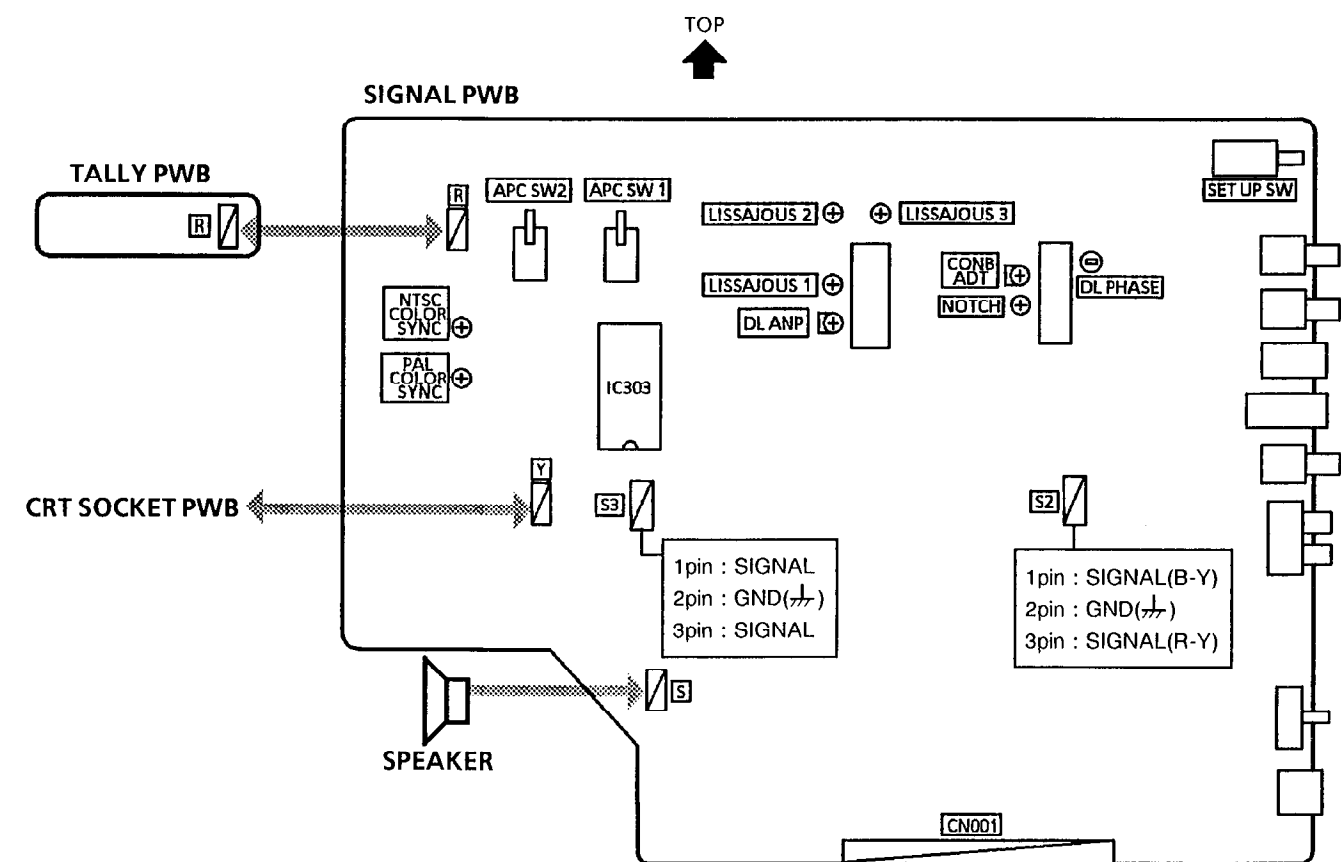
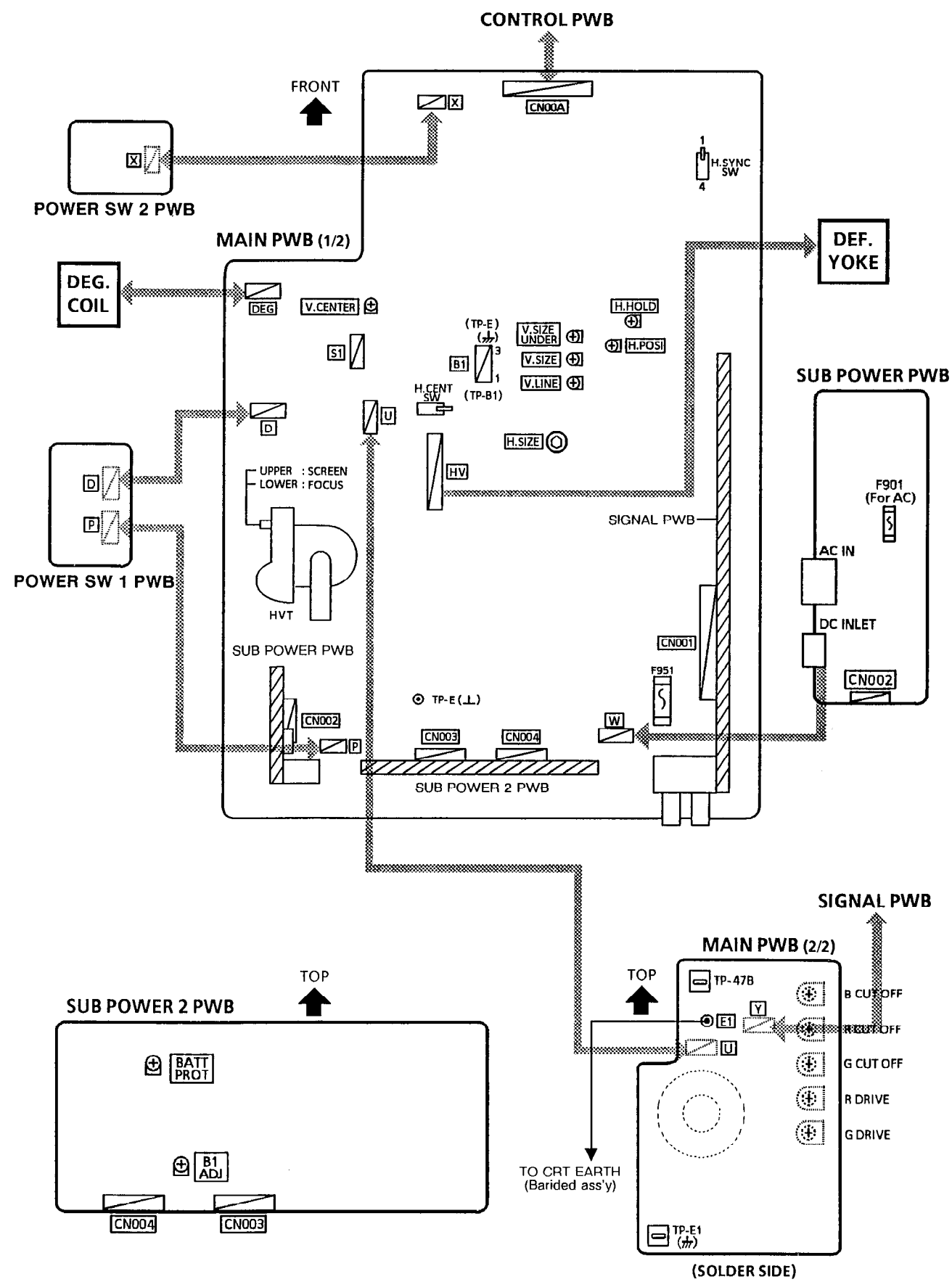
ICs

 <p>AN5265 AN5613 HA11423 TC4538BF TC4052BP TC4066BF UPC4558C</p>	 <p>AN5265</p>	 <p>AN7812F</p>
 <p>LA7830</p>	 <p>LA7016 AN5900 AN8026</p>	 <p>S1854-C1 TA7012AP</p>

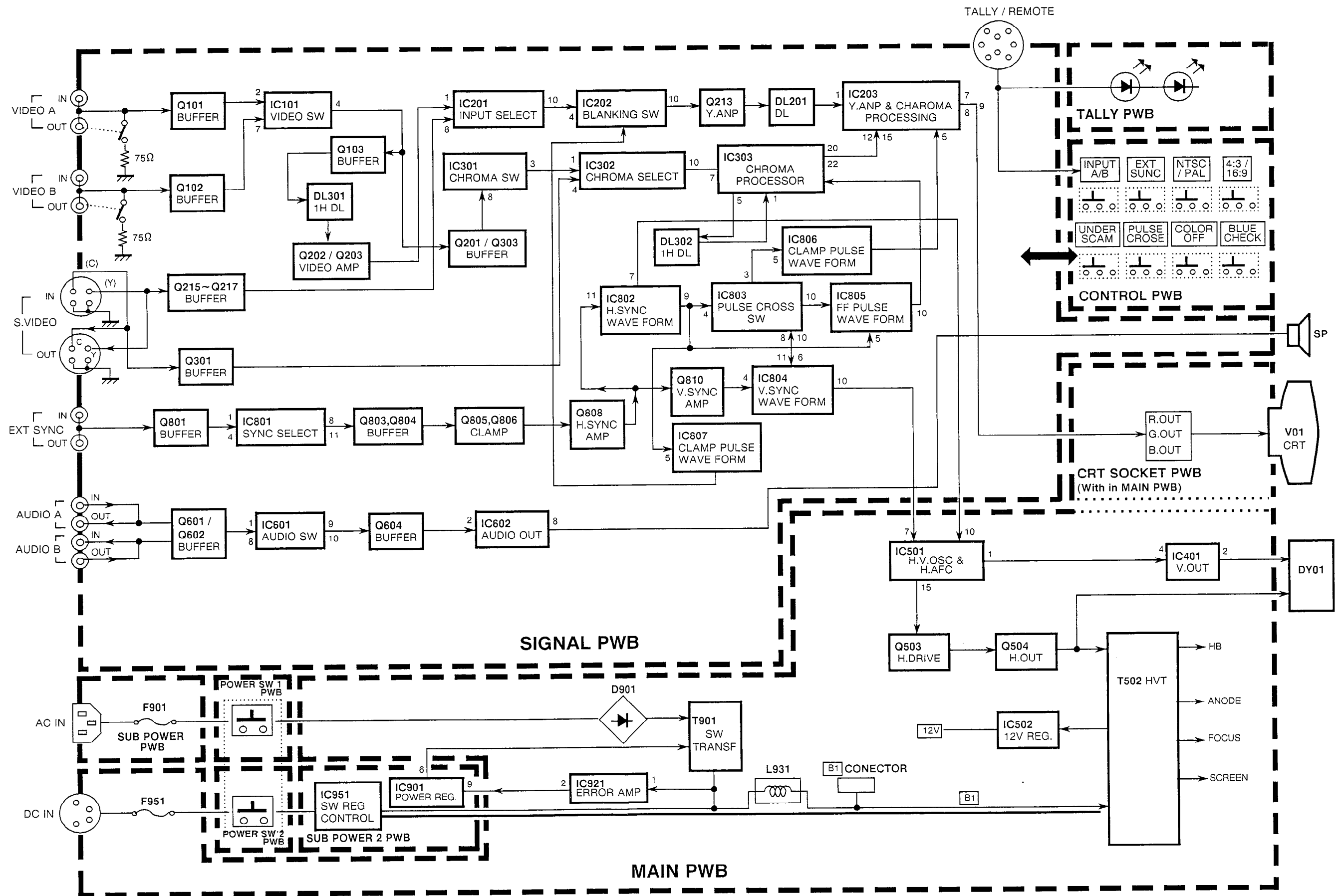
TRANSISTORS

<p>Bottom View</p>  <p>2SA1015(YG)-T 2SA1309 2SA1370(E) 2SA562TM 2SC1472K 2SC1815(YG)-T 2SC1959(Y) 2SC2655(Y)-T 2SC3187-T</p>	 <p>2SC1309A(QR) 2SC3311A(QR) DTC124ES-T DTC124ESA-T</p>	 <p>2SC2750(L)</p>
<p>(Chip Transistor)</p>  <p>2SA1037K(QR) 2SC2412K(QR) DTC144EKA</p>	 <p>IRFIBC40G IRF620 2SD1878-YD</p>	

MAIN PARTS LOCATION AND ALIGNMENTS LOCATION



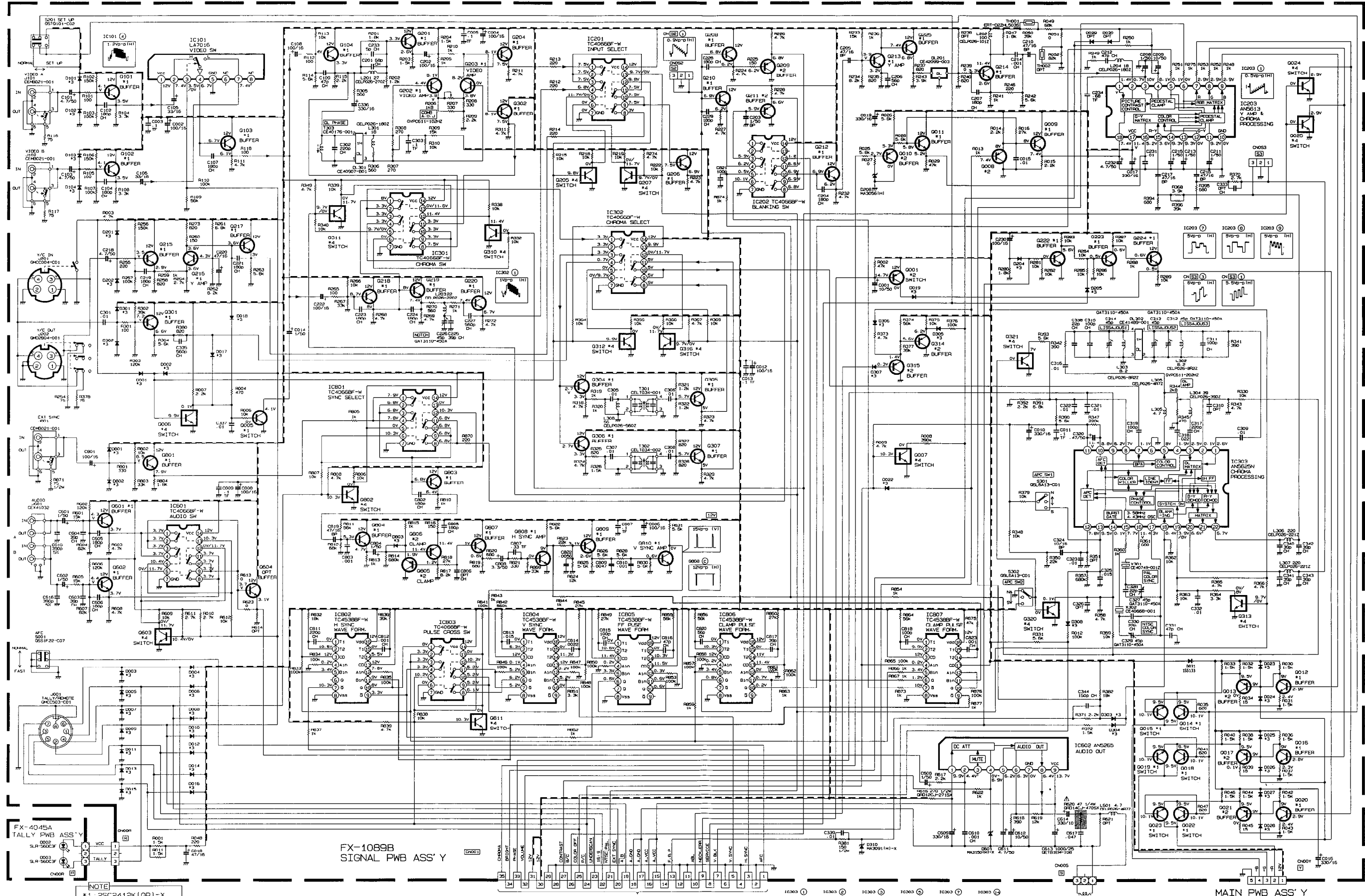
BLOCK DIAGRAM



CIRCUIT DIAGRAMS AND PWB PATTERNS

SIGNAL PWB, TALLY PWB CIRCUIT DIAGRAM

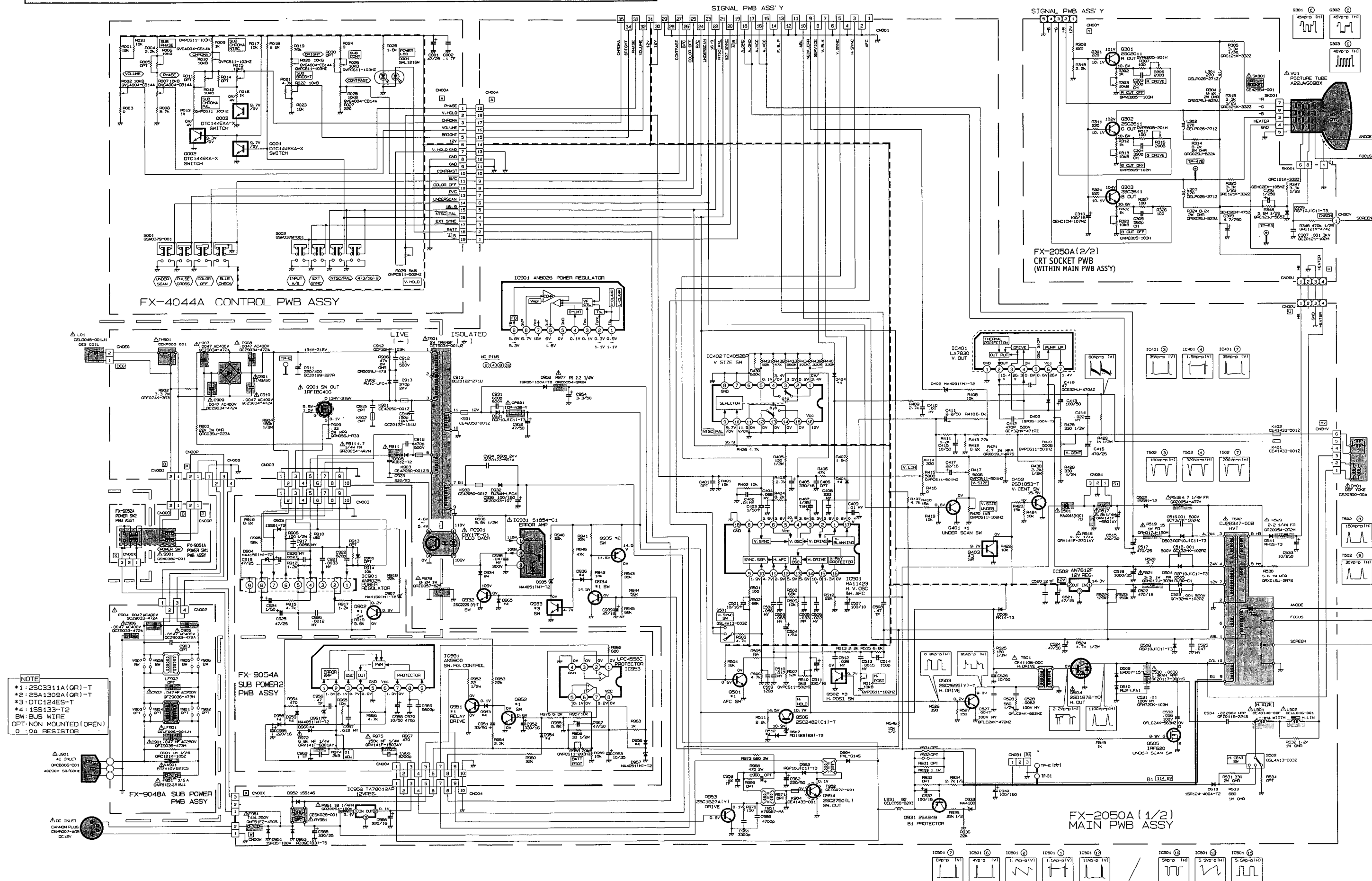
Refer to the following PWB pattern: SIGNAL PWB PATTERN 31, 32 page.
TALLY PWB 35 page.



Refer to the following PWB pattern: **MAIN PWB PATTERN (1/2)** page 33, 34. **CONTROL PWB PATTERN** page 36.

**MAIN PWB (1/2), CRT SOCKET PWB(2/2), CONTROL PWB, SUB POWER PWB, SUB POWER2 PWB,
POWER SW1 PWB, POWER SW2 PWB, CIRTCUIT DIAGRAMS**

CRT SOCKET PWB PATTERN (2/2) page 35.
SUB POWER PWB PATTERN, SUB POWER 2 PWB PATTERN page 34.
POWER SW1 PWB PATTERN, POWER SW2 PWB PATTERN page 35.

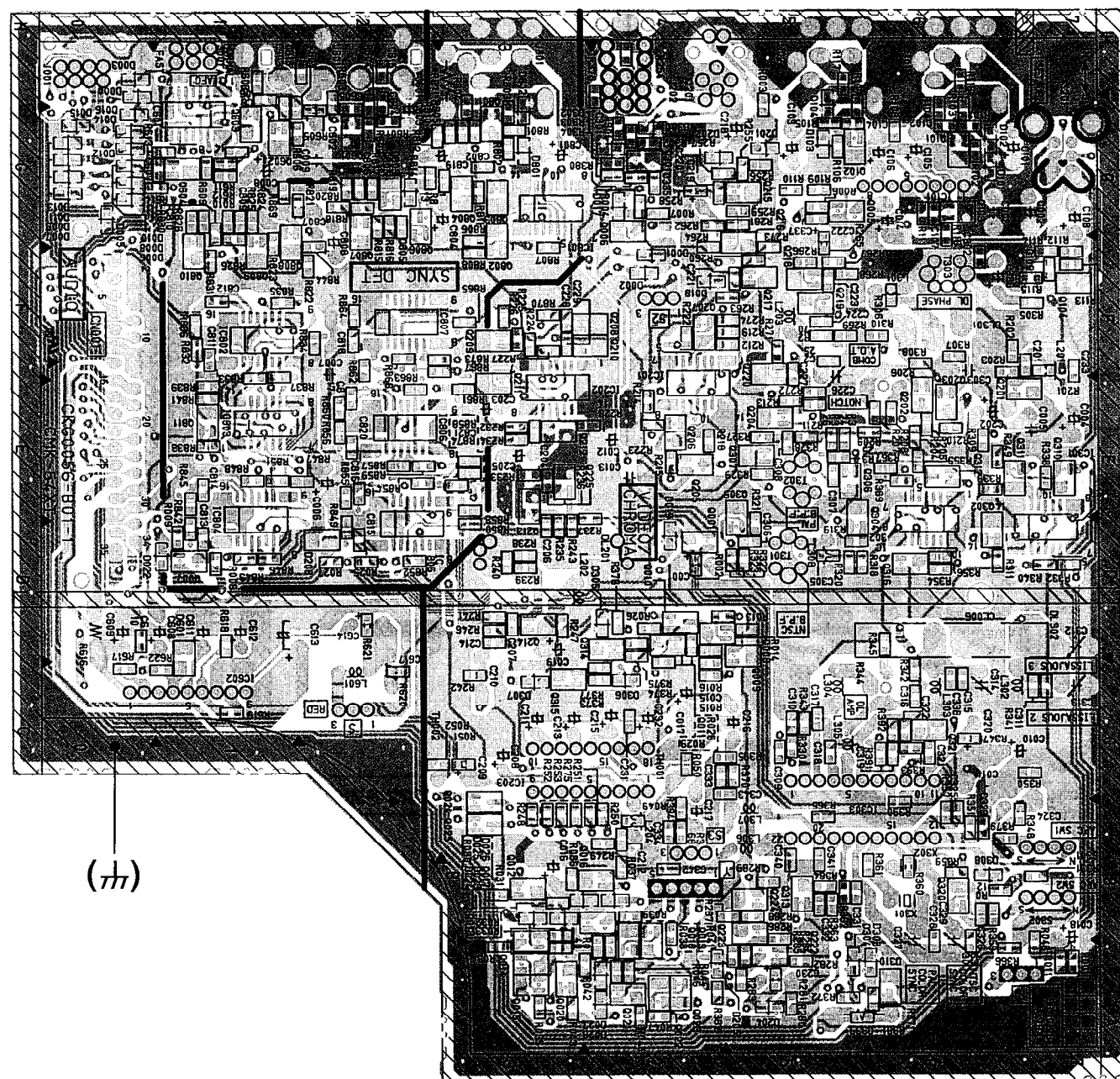


SIGNAL PWB PATTERN (SOLDER SIDE)

[FX-1089B]

(Magnification Rate 89%)

↑ REAR



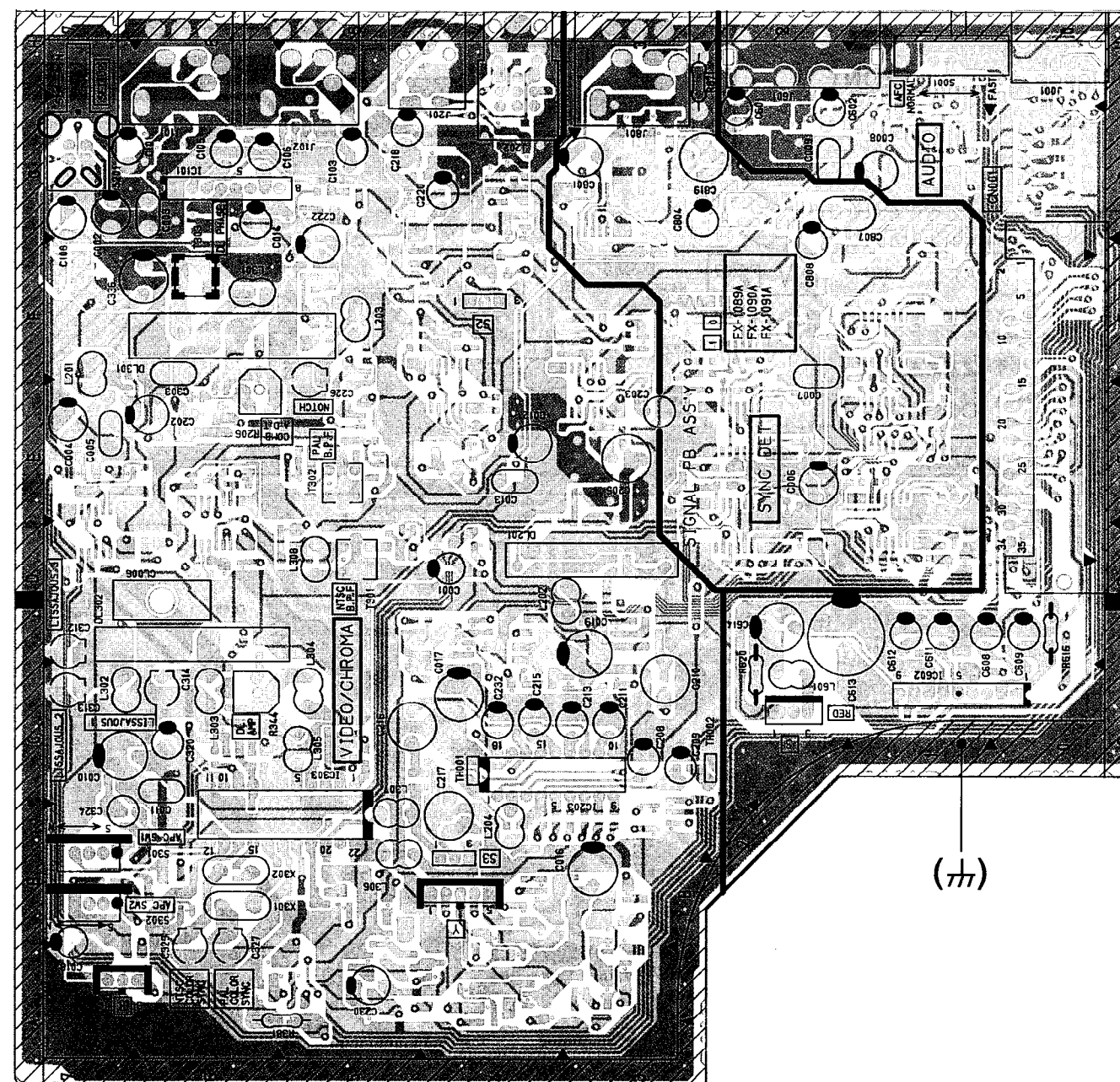
(7)

SIGNAL PWB PATTERN (PARTS SIDE)

[FX-1089B]

(Magnification Rate 89%)

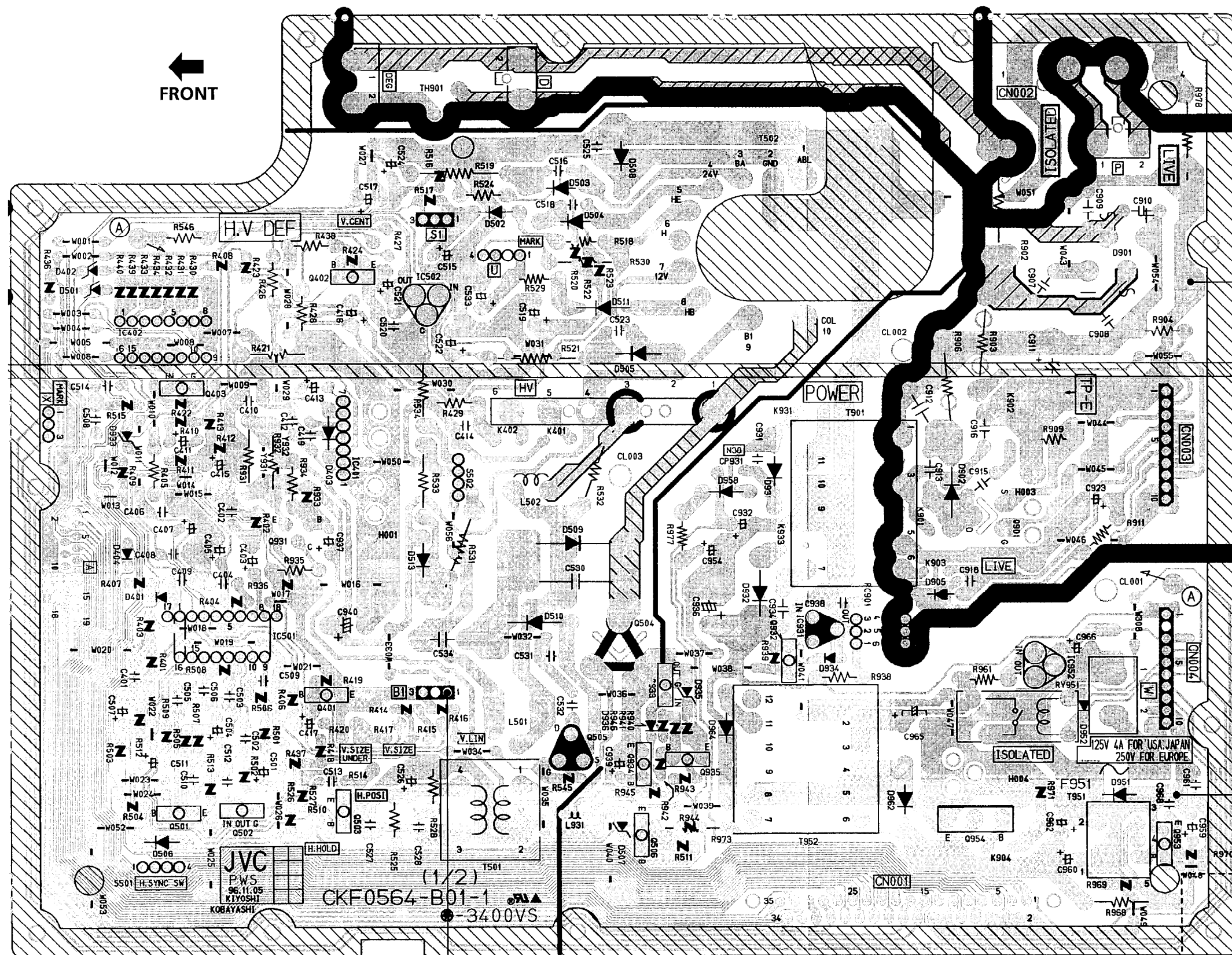
↑ REAR



(7)

[FX-2050A]

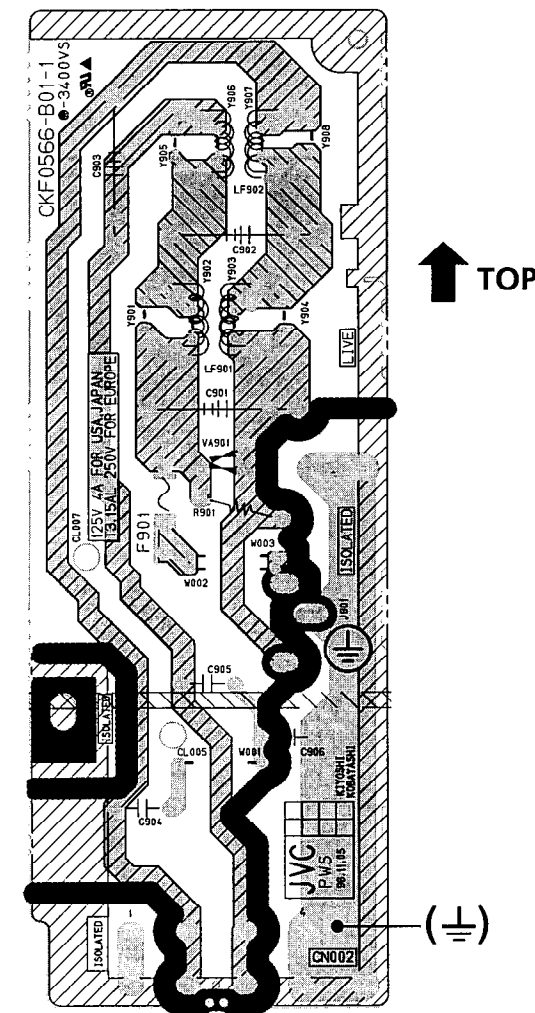
(Magnification Rate 110%)



(TP-B1)

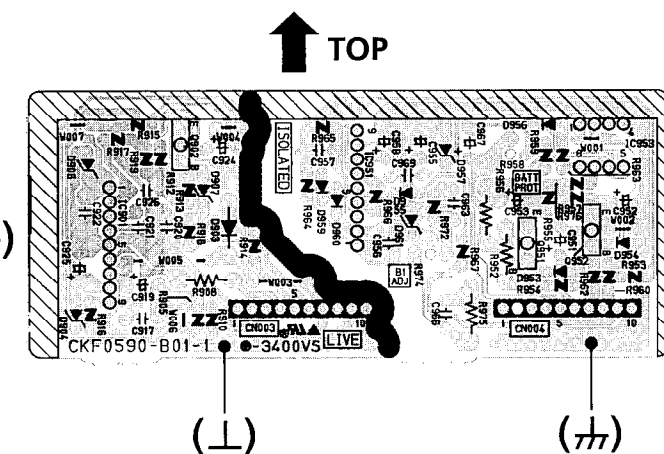
SUB POWER PWB PATTERN [FX-9048A]

(Magnification Rate 75%)

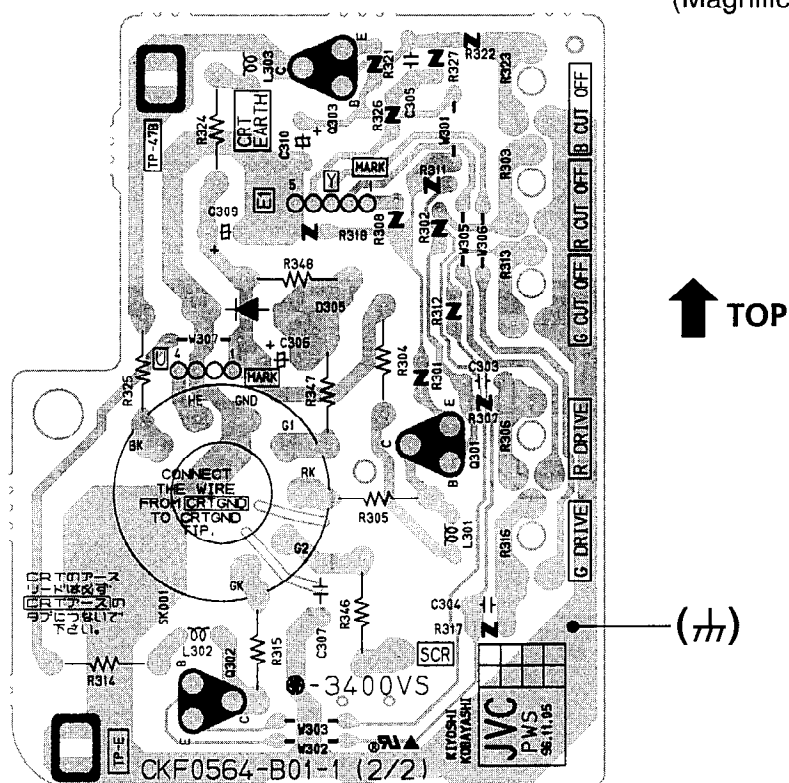


SUB POWER2 PWB PATTERN [FX-9054A]

(Magnification Rate 75%)



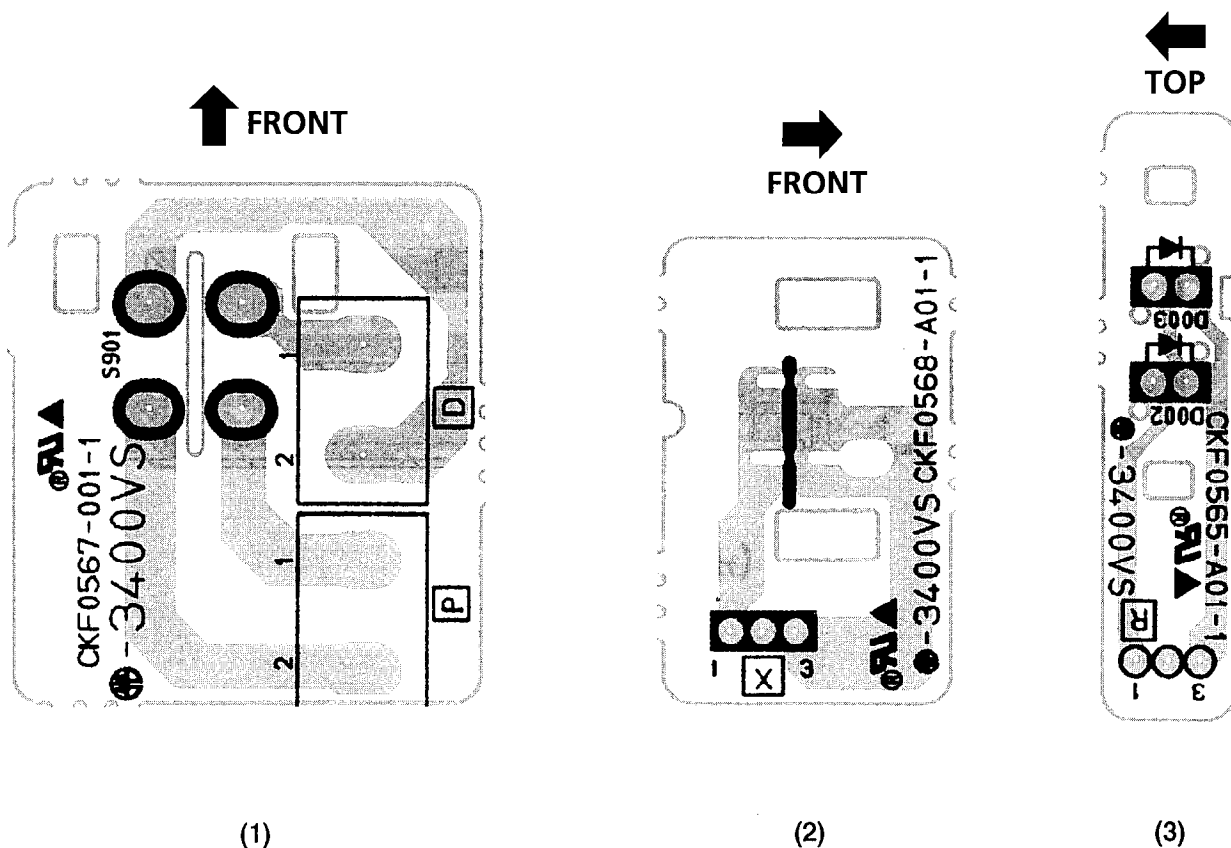
(Magnification Rate 95%)



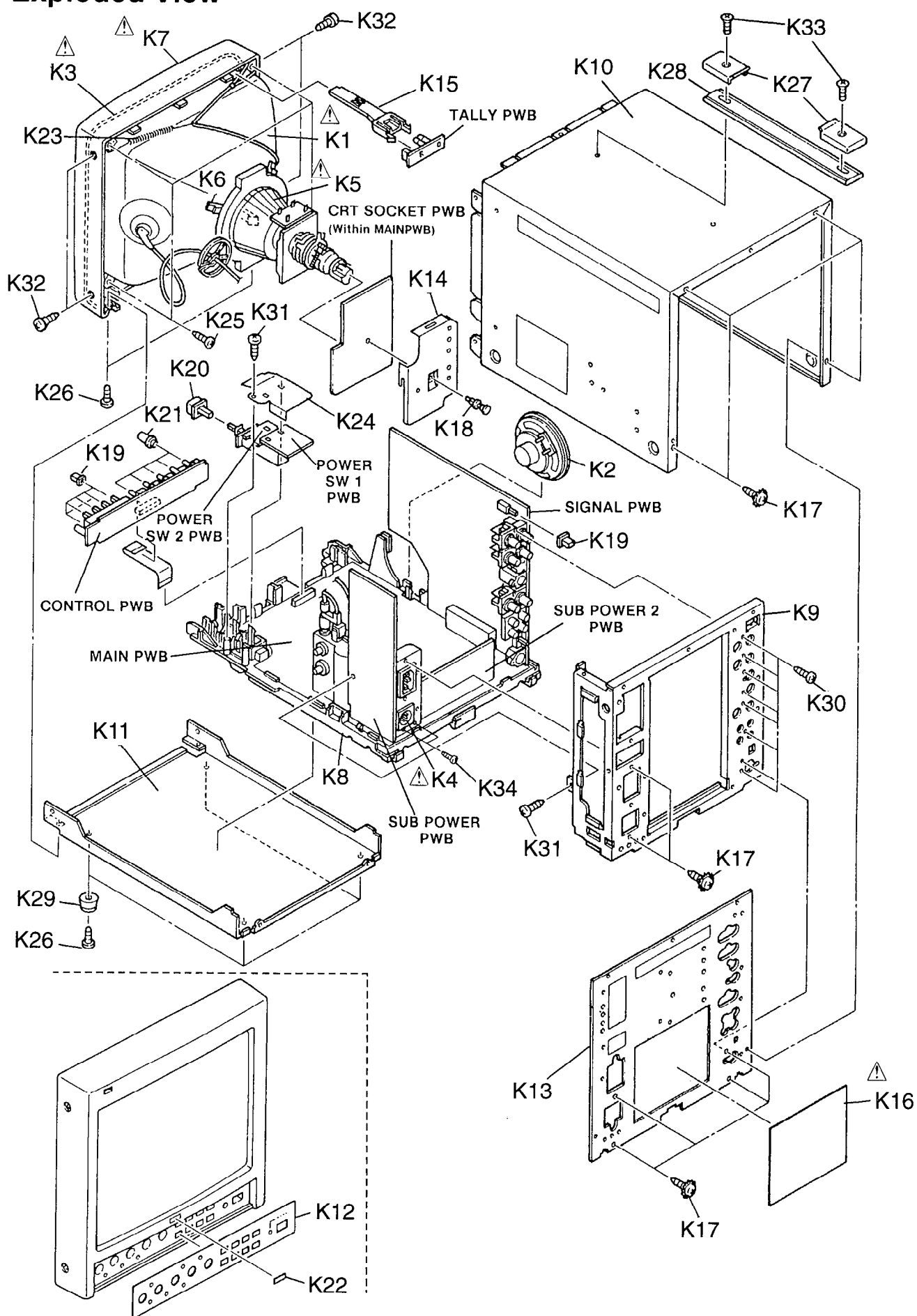
POWER SW1 PWB PATTERN (1)
POWER SW2 PWB PATTERN (2)
TALLY PWB PATTERN (3)

[FX-9051A]
[FX-9052A]
[FX-4045A]

(Magnification Rate 170%)



Exploded View



7-2. REPLACEMENT PARTS LIST

Important Safety Notice

Components identified by the International symbol Δ have special characteristics important for safety.
When replacing any of these components, use only manufacturer's specified parts.

Abbreviation of Part Name and Description

1. Resistor

Example:

C 100KOHM, J, 1/4W

TYPE ALLOWANCE

TYPE	ALLOWANCE
C : Carbon	F : $\pm 1\%$
F : Fuse	G : $\pm 2\%$
M : Metal Oxide	J : $\pm 5\%$
Metal Film	K : $\pm 10\%$
S : Solid	M : $\pm 20\%$
W : Wire Wound	

2. Capacitor

Example:

C 0.01PF, Z, 50V

TYPE ALLOWANCE

TYPE	ALLOWANCE
C : Ceramic	C : $\pm 0.25\text{pF}$
E : Electrolytic	D : $\pm 0.5\text{pF}$
P : Polyester	F : $\pm 1\text{pF}$
PP : Polypropylene	J : $\pm 5\%$
S : Styrol	K : $\pm 10\%$
T : Tantalum	L : $\pm 15\%$
	M : $\pm 20\%$
	P : +100%, -0%
	Z : +80%, -20%

Note: For G \bigcirc \bigcirc of Ref. No., notr indicate illustration of it part on "Exploded Views".

Printed circuit board assembly with mark (RTL) is no longer available after production discontinuation of the complete set.

Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
MECHANICAL PARTS					
Δ K1	A22JWG098X	PICTURE TUBE (V01)	K25	GBSF4016M	SCREW
K2	CEBSS08P01KJ	SPEAKER	K26	GBSG3008Z	SCREW
Δ K3	CELD046001J1	DEGAUSS COIL (L01)	K27	PRD43812	HANDLE COVER
Δ K4	CEMR007-B0B	DC INLET	K28	PU46361-2	HANDEL
Δ K5	CE20300-00A	DEFLECTION YOKE (DY01)	G8	QMP4908-200K	POWER CORD (for BT-S1050Y)
K6	CE40666-00A	DY WEDGE	G8	QMPP010-200K	POWER CORD (for BT-S1050YG)
K7	CM12867A02V0	ESCUTCHEON	G9	QPGA01203005	BAG
K8	CM12868A01V0	CHASSIS BASE	K29	QZF2207-001	FOOT
K9	CM12869-001	TERMINAL BRACKET	K30	SBSB3010M	SCREW
K10	CM12879-00C	TOP COVER	K31	SBSF4012Z	SCREW
K11	CM22942-C01	BOTTOM COVER	K32	SDSF3006M	SCREW
K12	CM23089-B02	CONTROL SHEET	K33	SHSP4014R	SCREW
K13	CM23130-00B	REAR COVER	K34	SPST2606N	SCREW
K14	CM36519-001	GUARD SHEET	G10	XZBT6506	POLY BAG
K15	CM36546-A01	TALLY PLATE	INTEGRATED CIRCUITS		
Δ K16	CM36586-A01R	LABEL (for BT-S1050Y)	IC1101	LA7016	LINEAR IC
Δ K16	CM36586-A02R	LABEL (for BT-S1050YG)	IC1201	TC4066BF	IC
K17	CM44287-00C	SCREW	IC1202	TC4066BF	IC
K18	CM45627-00A	RIVET	IC1203	AN5613	LINEAR IC
K19	CM46044-002	PUSH KNOB	IC1301	TC4066BF	IC
K20	CM46115-003	POWER KNOB	IC1302	TC4066BF	IC
G1	CM46942-A01	LED HOLDER	IC1303	AN5625N	LINEAR IC
K21	CM47853-006	VOLUME KNOB	IC1601	TC4066BF	IC
G2	CM48038-001	LED HOLDER	IC1602	AN5265	LINEAR IC
K22	CM48151-010	PANASONIC BADGE	IC1801	TC4066BF	IC
K23	CM48174-001	SPRING	IC1802	TC4538BF	IC
K24	CM48246-001	SWITCH SHEET	IC1803	TC4066BF	IC
G3	CP11224-047	CARTON (for BT-S1050Y)	IC1804	TC4538BF	IC
G3	CP11224-048	CARTON (for BT-S1050YG)	IC1805	TC4538BF	IC
G4	CP11460-B0A	CUSHION	IC1806	TC4538BF	IC
G5	CP30974-003	BAG	IC1807	TC4538BF	IC
G6	CP40339-001	CUSHION	IC2401	LA7830	IC
G7	CQ40377-001	INSTRUCTION BOOK	IC2402	TC4052BP	MOS IC (CMOS LOGIC)

	Ref. No.	Part No.	Description		Ref. No.	Part No.	Description
△	IC2501	HA11423	LINEAR IC		Q1311	DTC144EKA-X	TRANSISTOR
	IC2502	AN7812F	LINEAR IC		Q1312	DTC144EKA-X	TRANSISTOR
	IC2931	S1854	LINEAR IC		Q1313	DTC144EKA-X	TRANSISTOR
	IC2952	TA78012AP	IC		Q1314	2SA1037K(QR)	TRANSISTOR
	IC9901	AN8026	LINEAR IC		Q1315	2SA1037K(QR)	TRANSISTOR
	IC9951	AN5900	LINEAR IC		Q1316	DTC144EKA-X	TRANSISTOR
	IC9953	UPC4558C	LINEAR IC		Q1320	DTC144EKA-X	TRANSISTOR
TRANSISTORS					Q1321	DTC144EKA-X	TRANSISTOR
	Q1001	2SA1037K(QR)	TRANSISTOR		Q1601	2SC2412K(QR)	TRANSISTOR
	Q1005	2SC2412K(QR)	TRANSISTOR		Q1602	2SC2412K(QR)	TRANSISTOR
	Q1006	DTC144EKA-X	TRANSISTOR		Q1603	DTC144EKA-X	TRANSISTOR
	Q1007	DTC144EKA-X	TRANSISTOR		Q1801	2SC2412K(QR)	TRANSISTOR
	Q1008	2SA1037K(QR)	TRANSISTOR		Q1802	DTC144EKA-X	TRANSISTOR
	Q1009	2SC2412K(QR)	TRANSISTOR		Q1803	2SC2412K(QR)	TRANSISTOR
	Q1010	2SA1037K(QR)	TRANSISTOR		Q1804	2SC2412K(QR)	TRANSISTOR
	Q1011	2SC2412K(QR)	TRANSISTOR		Q1805	2SA1037K(QR)	TRANSISTOR
	Q1012	2SC2412K(QR)	TRANSISTOR		Q1807	2SC2412K(QR)	TRANSISTOR
	Q1013	2SA1037K(QR)	TRANSISTOR		Q1808	2SC2412K(QR)	TRANSISTOR
	Q1014	2SC2412K(QR)	TRANSISTOR		Q1809	2SC2412K(QR)	TRANSISTOR
	Q1015	2SC2412K(QR)	TRANSISTOR		Q1810	2SC2412K(QR)	TRANSISTOR
	Q1016	2SC2412K(QR)	TRANSISTOR		Q1811	DTC144EKA-X	TRANSISTOR
	Q1017	2SA1037K(QR)	TRANSISTOR		Q2301	2SC2611	TRANSISTOR
	Q1018	2SC2412K(QR)	TRANSISTOR		Q2302	2SC2611	TRANSISTOR
	Q1019	2SC2412K(QR)	TRANSISTOR		Q2303	2SC2611	TRANSISTOR
	Q1020	2SC2412K(QR)	TRANSISTOR		Q2401	2SC3311A	TRANSISTOR
	Q1021	2SA1037K(QR)	TRANSISTOR		Q2402	2SD1853-T	TRANSISTOR
	Q1022	2SC2412K(QR)	TRANSISTOR		Q2403	DTC124ES	TRANSISTOR
	Q1023	2SC2412K(QR)	TRANSISTOR	△	Q2501	2SC3311A	TRANSISTOR
	Q1024	DTC144EKA-X	TRANSISTOR		Q2502	DTC124ES	TRANSISTOR
	Q1025	DTC144EKA-X	TRANSISTOR	△	Q2503	2SC2655	TRANSISTOR
	Q1086	2SA1037K(QR)	TRANSISTOR		Q2504	2SD1878-YD	TRANSISTOR
	Q1101	2SC2412K(QR)	TRANSISTOR		Q2505	IRF620	FET
	Q1102	2SC2412K(QR)	TRANSISTOR		Q2506	2SC2482(C1)	TRANSISTOR
	Q1103	2SC2412K(QR)	TRANSISTOR		Q2901	IRFIB40G	FET
	Q1104	2SC2412K(QR)	TRANSISTOR		Q2931	2SA949(Y)C1	TRANSISTOR
	Q1201	2SC2412K(QR)	TRANSISTOR		Q2932	2SC2229	TRANSISTOR
	Q1202	2SC2412K(QR)	TRANSISTOR		Q2933	DTC124ES	TRANSISTOR
	Q1203	2SC2412K(QR)	TRANSISTOR		Q2934	2SC3311A	TRANSISTOR
	Q1204	2SC2412K(QR)	TRANSISTOR		Q2935	2SA1309A	TRANSISTOR
	Q1205	DTC144EKA-X	TRANSISTOR		Q2953	2SC1627AY	TRANSISTOR
	Q1206	2SC2412K(QR)	TRANSISTOR		Q2954	2SC2750L	TRANSISTOR
	Q1207	DTC144EKA-X	TRANSISTOR		Q4001	DTC144EKA-X	TRANSISTOR
	Q1208	2SC2412K(QR)	TRANSISTOR		Q4002	DTC144EKA-X	TRANSISTOR
	Q1209	2SA1037K(QR)	TRANSISTOR		Q4003	DTC144EKA-X	TRANSISTOR
	Q1210	2SC2412K(QR)	TRANSISTOR		Q9902	2SC3311A	TRANSISTOR
	Q1211	2SA1037K(QR)	TRANSISTOR		Q9951	2SC3311A	TRANSISTOR
	Q1212	2SC2412K(QR)	TRANSISTOR		Q9952	2SC3311A	TRANSISTOR
	Q1213	2SC2412K(QR)	TRANSISTOR	DIODES			
	Q1214	2SC2412K(QR)	TRANSISTOR		D1001	1SS353	DIODE
	Q1215	2SC2412K(QR)	TRANSISTOR		D1002	1SS353	DIODE
	Q1216	2SC2412K(QR)	TRANSISTOR		D1003	1SS353	DIODE
	Q1217	2SC2412K(QR)	TRANSISTOR		D1004	1SS353	DIODE
	Q1218	2SC2412K(QR)	TRANSISTOR		D1005	1SS353	DIODE
	Q1219	2SC2412K(QR)	TRANSISTOR		D1006	1SS353	DIODE
	Q1220	2SC2412K(QR)	TRANSISTOR		D1007	1SS353	DIODE
	Q1222	2SC2412K(QR)	TRANSISTOR		D1008	1SS353	DIODE
	Q1223	2SC2412K(QR)	TRANSISTOR		D1009	1SS353	DIODE
	Q1224	2SC2412K(QR)	TRANSISTOR		D1010	1SS353	DIODE
	Q1225	2SC2412K(QR)	TRANSISTOR		D1011	1SS353	DIODE
	Q1301	2SC2412K(QR)	TRANSISTOR		D1012	1SS353	DIODE
	Q1302	2SC2412K(QR)	TRANSISTOR		D1013	1SS353	DIODE
	Q1304	2SC2412K(QR)	TRANSISTOR		D1014	1SS353	DIODE
	Q1305	2SC2412K(QR)	TRANSISTOR		D1015	1SS353	DIODE
	Q1306	2SC2412K(QR)	TRANSISTOR		D1016	1SS353	DIODE
	Q1307	2SC2412K(QR)	TRANSISTOR		D1017	1SS353	DIODE
	Q1310	DTC144EKA-X	TRANSISTOR		D1018	1SS353	DIODE
					D1019	1SS353	DIODE

[illegible]

Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
R1030	QRSA08J152YL	M 1.5KOHM, J, 1/10W	R1239	QRSA08J0R0YL	M 0 OHM, J, 1/10W
R1031	QRSA08J152YL	M 1.5KOHM, J, 1/10W	R1240	QRSA08J821YL	M 820 OHM, J, 1/10W
R1032	QRSA08J152YL	M 1.5KOHM, J, 1/10W	R1241	QRSA08J102YL	M 1KOHM, J, 1/10W
R1033	QRSA08J152YL	M 1.5KOHM, J, 1/10W	R1242	QRSA08J562YL	M 5.6KOHM, J, 1/10W
R1034	QRSA08J150YL	M 15 OHM, J, 1/10W	R1243	QRSA08J392YL	M 3.9KOHM, J, 1/10W
R1035	QRSA08J821YL	M 820 OHM, J, 1/10W	R1246	QRSA08J221YL	M 220 OHM, J, 1/10W
R1036	QRSA08J152YL	M 1.5KOHM, J, 1/10W	R1247	QRSA08J152YL	M 1.5KOHM, J, 1/10W
R1037	QRSA08J152YL	M 1.5KOHM, J, 1/10W	R1248	QRSA08J102YL	M 1KOHM, J, 1/10W
R1038	QRSA08J152YL	M 1.5KOHM, J, 1/10W	R1249	QRSA08J102YL	M 1KOHM, J, 1/10W
R1039	QRSA08J150YL	M 15 OHM, J, 1/10W	R1250	QRSA08J102YL	M 1KOHM, J, 1/10W
R1040	QRSA08J152YL	M 1.5KOHM, J, 1/10W	R1251	QRSA08J102YL	M 1KOHM, J, 1/10W
R1041	QRSA08J152YL	M 820 OHM, J, 1/10W	R1252	QRSA08J102YL	M 1KOHM, J, 1/10W
R1042	QRSA08J152YL	M 1.5KOHM, J, 1/10W	R1253	QRSA08J102YL	M 1KOHM, J, 1/10W
R1043	QRSA08J152YL	M 1.5KOHM, J, 1/10W	R1254	QRSA08J750YL	M 75 OHM, J, 1/10W
R1044	QRSA08J152YL	M 1.5KOHM, J, 1/10W	R1255	QRSA08J221YL	M 220 OHM, J, 1/10W
R1045	QRSA08J150YL	M 15 OHM, J, 1/10W	R1256	QRSA08J154YL	M 150KOHM, J, 1/10W
R1046	QRSA08J152YL	M 1.5KOHM, J, 1/10W	R1257	QRSA08J104YL	M 100KOHM, J, 1/10W
R1047	QRSA08J152YL	M 1.5KOHM, J, 1/10W	R1258	QRSA08J821YL	M 820 OHM, J, 1/10W
R1048	QRSA08J221YL	M 220 OHM, J, 1/10W	R1259	QRSA08J102YL	M 1KOHM, J, 1/10W
R1049	QRSA08J683YL	M 68KOHM, J, 1/10W	R1260	QRSA08J151YL	M 150 OHM, J, 1/10W
R1051	QRSA08J0R0YL	M 0 OHM, J, 1/10W	R1261	QRSA08J682YL	M 6.8KOHM, J, 1/10W
R1052	QRSA08J823YL	M 82KOHM, J, 1/10W	R1262	QRSA08J822YL	M 8.2KOHM, J, 1/10W
R1101	QRSA08J101YL	M 100 OHM, J, 1/10W	R1263	QRSA08J562YL	M 5.6KOHM, J, 1/10W
R1102	QRSA08J154YL	M 150KOHM, J, 1/10W	R1264	QRSA08J272YL	M 2.7KOHM, J, 1/10W
R1103	QRSA08J104YL	M 100KOHM, J, 1/10W	R1265	QRSA08J101YL	M 100 OHM, J, 1/10W
R1104	QRSA08J332YL	M 3.3KOHM, J, 1/10W	R1266	QRSA08J103YL	M 10KOHM, J, 1/10W
R1105	QRSA08J101YL	M 100 OHM, J, 1/10W	R1267	QRSA08J333YL	M 33KOHM, J, 1/10W
R1106	QRSA08J154YL	M 150KOHM, J, 1/10W	R1268	QRSA08J472YL	M 4.7KOHM, J, 1/10W
R1107	QRSA08J104YL	M 100KOHM, J, 1/10W	R1269	QRSA08J472YL	M 4.7KOHM, J, 1/10W
R1108	QRSA08J332YL	M 3.3KOHM, J, 1/10W	R1270	QRSA08J561YL	M 560 OHM, J, 1/10W
R1109	QRSA08J563YL	M 56KOHM, J, 1/10W	R1271	QRSA08J102YL	M 1KOHM, J, 1/10W
R1110	QRSA08J104YL	M 100KOHM, J, 1/10W	R1272	QRSA08J472YL	M 4.7KOHM, J, 1/10W
R1111	QRSA08J472YL	M 4.7KOHM, J, 1/10W	R1273	QRSA08J821YL	M 820 OHM, J, 1/10W
R1112	QRSA08J101YL	M 100 OHM, J, 1/10W	R1274	QRSA08J472YL	M 4.7KOHM, J, 1/10W
R1113	QRSA08J103YL	M 10KOHM, J, 1/10W	R1275	QRSA08J102YL	M 1KOHM, J, 1/10W
R1114	QRSA08J562YL	M 5.6KOHM, J, 1/10W	R1280	QRSA08J182YL	M 1.8KOHM, J, 1/10W
R1115	QRSA08J222YL	M 2.2KOHM, J, 1/10W	R1281	QRSA08J103YL	M 10KOHM, J, 1/10W
R1116	QRSA08J750YL	M 75 OHM, J, 1/10W	R1282	QRSA08J103YL	M 10KOHM, J, 1/10W
R1117	QRSA08J750YL	M 75 OHM, J, 1/10W	R1283	QRSA08J103YL	M 10KOHM, J, 1/10W
R1118	QRSA08J101YL	M 100 OHM, J, 1/10W	R1284	QRSA08J103YL	M 10KOHM, J, 1/10W
R1201	QRSA08J182YL	M 1.8KOHM, J, 1/10W	R1285	QRSA08J103YL	M 10KOHM, J, 1/10W
R1202	QRSA08J122YL	M 1.2KOHM, J, 1/10W	R1286	QRSA08J103YL	M 10KOHM, J, 1/10W
R1203	QRSA08J152YL	M 1.5KOHM, J, 1/10W	R1287	QRSA08J103YL	M 10KOHM, J, 1/10W
R1204	QRSA08J152YL	M 1.5KOHM, J, 1/10W	R1288	QRSA08J102YL	M 1KOHM, J, 1/10W
R1205	QRSA08J102YL	M 1KOHM, J, 1/10W	R1289	QRSA08J103YL	M 10KOHM, J, 1/10W
R1206	QVPC611102HZ	CONTROL 1KOHMB	R1301	QRSA08J101YL	M 100 OHM, J, 1/10W
R1207	QRSA08J331YL	M 330 OHM, J, 1/10W	R1302	QRSA08J393YL	M 39KOHM, J, 1/10W
R1208	QRSA08J331YL	M 330 OHM, J, 1/10W	R1303	QRSA08J124YL	M 120KOHM, J, 1/10W
R1209	QRSA08J221YL	M 2.2KOHM, J, 1/10W	R1304	QRSA08J562YL	M 5.6KOHM, J, 1/10W
R1210	QRSA08J102YL	M 1KOHM, J, 1/10W	R1305	QRSA08J561YL	M 560 OHM, J, 1/10W
R1211	QRSA08J472YL	M 4.7KOHM, J, 1/10W	R1306	QRSA08J561YL	M 560 OHM, J, 1/10W
R1212	QRSA08J221YL	M 220 OHM, J, 1/10W	R1307	QRSA08J271YL	M 270 OHM, J, 1/10W
R1213	QRSA08J221YL	M 220 OHM, J, 1/10W	R1308	QRSA08J271YL	M 270 OHM, J, 1/10W
R1214	QRSA08J221YL	M 220 OHM, J, 1/10W	R1309	QRSA08J153YL	M 15KOHM, J, 1/10W
R1215	QRSA08J103YL	M 10KOHM, J, 1/10W	R1310	QRSA08J103YL	M 10KOHM, J, 1/10W
R1218	QRSA08J103YL	M 10KOHM, J, 1/10W	R1311	QRSA08J472YL	M 4.7KOHM, J, 1/10W
R1219	QRSA08J103YL	M 10KOHM, J, 1/10W	R1318	QRSA08J472YL	M 4.7KOHM, J, 1/10W
R1222	QRSA08J103YL	M 10KOHM, J, 1/10W	R1319	QRSA08J102YL	M 1KOHM, J, 1/10W
R1223	QRSA08J472YL	M 4.7KOHM, J, 1/10W	R1320	QRSA08J102YL	M 1KOHM, J, 1/10W
R1224	QRSA08J472YL	M 4.7KOHM, J, 1/10W	R1321	QRSA08J122YL	M 1.2KOHM, J, 1/10W
R1225	QRSA08J151YL	M 150 OHM, J, 1/10W	R1322	QRSA08J122YL	M 1.2KOHM, J, 1/10W
R1226	QRSA08J472YL	M 4.7KOHM, J, 1/10W	R1323	QRSA08J472YL	M 4.7KOHM, J, 1/10W
R1227	QRSA08J472YL	M 4.7KOHM, J, 1/10W	R1324	QRSA08J472YL	M 4.7KOHM, J, 1/10W
R1228	QRSA08J472YL	M 4.7KOHM, J, 1/10W	R1325	QRSA08J821YL	M 820 OHM, J, 1/10W
R1232	QRSA08J472YL	M 4.7KOHM, J, 1/10W	R1326	QRSA08J152YL	M 1.5KOHM, J, 1/10W
R1233	QRSA08J153YL	M 15KOHM, J, 1/10W	R1327	QRSA08J821YL	M 820 OHM, J, 1/10W
R1234	QRSA08J822YL	M 8.2KOHM, J, 1/10W	R1328	QRSA08J821YL	M 820 OHM, J, 1/10W
R1235	QRSA08J821YL	M 820 OHM, J, 1/10W	R1329	QRSA08J472YL	M 4.7KOHM, J, 1/10W
R1236	QRSA08J102YL	M 1KOHM, J, 1/10W	R1330	QRSA08J103YL	M 10KOHM, J, 1/10W
R1237	QRSA08J821YL	M 820 OHM, J, 1/10W	R1331	QRSA08J562YL	M 5.6KOHM, J, 1/10W

Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
R1332	QRSA08J103YL	M 10KOHM, J, 1/10W	R1805	QRSA08J102YL	M 1KOHM, J, 1/10W
R1338	QRSA08J103YL	M 10KOHM, J, 1/10W	R1806	QRSA08J103YL	M 10KOHM, J, 1/10W
R1339	QRSA08J103YL	M 10KOHM, J, 1/10W	R1807	QRSA08J103YL	M 10KOHM, J, 1/10W
R1340	QRSA08J103YL	M 10KOHM, J, 1/10W	R1808	QRSA08J472YL	M 4.7KOHM, J, 1/10W
R1341	QRSA08J391YL	M 390 OHM, J, 1/10W	R1810	QRSA08J102YL	M 1KOHM, J, 1/10W
R1342	QRSA08J391YL	M 390 OHM, J, 1/10W	R1811	QRSA08J563YL	M 56KOHM, J, 1/10W
R1343	QRSA08J472YL	M 4.7KOHM, J, 1/10W	R1812	QRSA08J683YL	M 68KOHM, J, 1/10W
R1344	QVPC611202HZ	CONTROL 20KOHMB	R1813	QRSA08J102YL	M 1KOHM, J, 1/10W
R1345	QRSA08J471YL	M 470 OHM, J, 1/10W	R1814	QRSA08J684YL	M 680KOHM, J, 1/10W
R1347	QRSA08J224YL	M 220KOHM, J, 1/10W	R1815	QRSA08J102YL	M 1KOHM, J, 1/10W
R1348	QRSA08J103YL	M 10KOHM, J, 1/10W	R1816	QRSA08J151YL	M 150 OHM, J, 1/10W
R1349	QRSA08J472YL	M 4.7KOHM, J, 1/10W	R1817	QRSA08J822YL	M 8.2KOHM, J, 1/10W
R1350	QRSA08J223YL	M 22KOHM, J, 1/10W	R1818	QRSA08J273YL	M 27KOHM, J, 1/10W
R1354	QRSA08J103YL	M 10KOHM, J, 1/10W	R1819	QRSA08J681YL	M 680 OHM, J, 1/10W
R1355	QRSA08J103YL	M 10KOHM, J, 1/10W	R1820	QRSA08J681YL	M 680 OHM, J, 1/10W
R1356	QRSA08J103YL	M 10KOHM, J, 1/10W	R1821	QRSA08J331YL	M 330 OHM, J, 1/10W
R1357	QRSA08J684YL	M 680KOHM, J, 1/10W	R1822	QRSA08J562YL	M 5.6KOHM, J, 1/10W
R1358	QRSA08J472YL	M 4.7KOHM, J, 1/10W	R1823	QRSA08J223YL	M 22KOHM, J, 1/10W
R1359	QRSA08J103YL	M 10KOHM, J, 1/10W	R1824	QRSA08J123YL	M 12KOHM, J, 1/10W
R1360	QRSA08J102YL	M 1KOHM, J, 1/10W	R1825	QRSA08J562YL	M 5.6KOHM, J, 1/10W
R1361	QRSA08J681YL	M 680 OHM, J, 1/10W	R1826	QRSA08J562YL	M 5.6KOHM, J, 1/10W
R1362	QRSA08J103YL	M 10KOHM, J, 1/10W	R1828	QRSA08J562YL	M 5.6KOHM, J, 1/10W
R1363	QRSA08J103YL	M 10KOHM, J, 1/10W	R1830	QRSA08J562YL	M 5.6KOHM, J, 1/10W
R1364	QRSA08J332YL	M 3.3KOHM, J, 1/10W	R1831	QRSA08J562YL	M 5.6KOHM, J, 1/10W
R1365	QRSA08J472YL	M 4.7KOHM, J, 1/10W	R1832	QRSA08J183YL	M 18KOHM, J, 1/10W
R1366	QRSA08J472YL	M 4.7KOHM, J, 1/10W	R1833	QRSA08J104YL	M 100KOHM, J, 1/10W
R1367	QRSA08J472YL	M 4.7KOHM, J, 1/10W	R1834	QRSA08J104YL	M 100KOHM, J, 1/10W
R1368	QRSA08J392YL	M 3.9KOHM, J, 1/10W	R1835	QRSA08J104YL	M 100KOHM, J, 1/10W
R1369	QRSA08J103YL	M 10KOHM, J, 1/10W	R1836	QRSA08J393YL	M 39KOHM, J, 1/10W
R1370	QRSA08J272YL	M 2.7KOHM, J, 1/10W	R1837	QRSA08J102YL	M 1KOHM, J, 1/10W
R1371	QRSA08J222YL	M 2.2KOHM, J, 1/10W	R1838	QRSA08J103YL	M 10KOHM, J, 1/10W
R1372	QRSA08J152YL	M 1.5KOHM, J, 1/10W	R1839	QRSA08J472YL	M 4.7KOHM, J, 1/10W
R1373	QRSA08J472YL	M 4.7KOHM, J, 1/10W	R1841	QRSA08J104YL	M 100KOHM, J, 1/10W
R1374	QRSA08J563YL	M 56KOHM, J, 1/10W	R1842	QRSA08J564YL	M 560KOHM, J, 1/10W
R1375	QRSA08J103YL	M 10KOHM, J, 1/10W	R1843	QRSA08J102YL	M 1KOHM, J, 1/10W
R1376	QRSA08J104YL	M 100KOHM, J, 1/10W	R1844	QRSA08J102YL	M 1KOHM, J, 1/10W
R1377	QRSA08J393YL	M 39KOHM, J, 1/10W	R1845	QRSA08J273YL	M 27KOHM, J, 1/10W
R1378	QRSA08J750YL	M 75 OHM, J, 1/10W	R1846	QRSA08J104YL	M 100KOHM, J, 1/10W
R1379	QRSA08J103YL	M 10KOHM, J, 1/10W	R1847	QRSA08J104YL	M 100KOHM, J, 1/10W
R1380	QRSA08J821YL	M 820 OHM, J, 1/10W	R1848	QRSA08J104YL	M 100KOHM, J, 1/10W
R1381	QRD122J151S	C 150 OHM, J, 1/2W	R1849	QRSA08J273YL	M 27KOHM, J, 1/10W
R1390	QRSA08J562YL	M 5.6KOHM, J, 1/10W	R1850	QRSA08J104YL	M 100KOHM, J, 1/10W
R1391	QRSA08J682YL	M 6.8KOHM, J, 1/10W	R1851	QRSA08J332YL	M 3.3KOHM, J, 1/10W
R1392	QRSA08J222YL	M 2.2KOHM, J, 1/10W	R1852	QRSA08J102YL	M 1KOHM, J, 1/10W
R1393	QRSA08J562YL	M 5.6KOHM, J, 1/10W	R1853	QRSA08J104YL	M 100KOHM, J, 1/10W
R1394	QRSA08J681YL	M 680 OHM, J, 1/10W	R1854	QRSA08J102YL	M 1KOHM, J, 1/10W
R1395	QRSA08J681YL	M 680 OHM, J, 1/10W	R1855	QRSA08J563YL	M 56KOHM, J, 1/10W
R1396	QRSA08J393YL	M 39KOHM, J, 1/10W	R1856	QRSA08J563YL	M 56KOHM, J, 1/10W
R1601	QRSA08J153YL	M 15KOHM, J, 1/10W	R1857	QRSA08J104YL	M 100KOHM, J, 1/10W
R1602	QRSA08J124YL	M 120KOHM, J, 1/10W	R1858	QRSA08J104YL	M 100KOHM, J, 1/10W
R1603	QRSA08J472YL	M 4.7KOHM, J, 1/10W	R1859	QRSA08J102YL	M 1KOHM, J, 1/10W
R1604	QRSA08J823YL	M 82KOHM, J, 1/10W	R1860	QRSA08J273YL	M 27KOHM, J, 1/10W
R1605	QRSA08J153YL	M 15KOHM, J, 1/10W	R1861	QRSA08J104YL	M 100KOHM, J, 1/10W
R1606	QRSA08J124YL	M 120KOHM, J, 1/10W	R1862	QRSA08J104YL	M 100KOHM, J, 1/10W
R1607	QRSA08J823YL	M 82KOHM, J, 1/10W	R1863	QRSA08J102YL	M 1KOHM, J, 1/10W
R1608	QRSA08J472YL	M 4.7KOHM, J, 1/10W	R1864	QRSA08J563YL	M 56KOHM, J, 1/10W
R1609	QRSA08J103YL	M 10KOHM, J, 1/10W	R1865	QRSA08J104YL	M 100KOHM, J, 1/10W
R1611	QRSA08J272YL	M 2.7KOHM, J, 1/10W	R1866	QRSA08J102YL	M 1KOHM, J, 1/10W
R1612	QRSA08J103YL	M 10KOHM, J, 1/10W	R1867	QRSA08J102YL	M 1KOHM, J, 1/10W
R1613	QRSA08J0R0YL	M 0 OHM, J, 1/10W	R1869	QRSA08J333YL	M 33KOHM, J, 1/10W
R1616	QRD12CJ271SX	C 270 OHM, J, 1/2W	R1870	QRSA08J221YL	M 220 OHM, J, 1/10W
R1617	QRSA08J222YL	M 2.2KOHM, J, 1/10W	R1871	QRD122J151S	C 150 OHM, J, 1/2W
R1618	QRSA08J391YL	M 390 OHM, J, 1/10W	R1873	QRSA08J102YL	M 1KOHM, J, 1/10W
R1619	QRSA08J123YL	M 12KOHM, J, 1/10W	R1874	QRSA08J102YL	M 1KOHM, J, 1/10W
R1620	QRD14CJ470SX	C 47 OHM, J, 1/4W	R1875	QRSA08J473YL	M 47KOHM, J, 1/10W
R1622	QRSA08J102YL	M 1KOHM, J, 1/10W	R1876	QRSA08J104YL	M 100KOHM, J, 1/10W
R1623	QRSA08J0R0YL	M 0 OHM, J, 1/10W	R1877	QRSA08J102YL	M 1KOHM, J, 1/10W
R1801	QRSA08J331YL	M 330 OHM, J, 1/10W	R2301	QRD161J221Y	C 220 OHM, J, 1/6W
R1802	QRSA08J103YL	M 10KOHM, J, 1/10W	R2302	QRD161J102Y	C 1KOHM, J, 1/6W
R1803	QRSA08J333YL	M 33KOHM, J, 1/10W	R2303	QVPE805-103H	VARIABLE RESISTOR
R1804	QRSA08J182YL	M 1.8KOHM, J, 1/10W	R2304	QRG029J822	M 8.2KOHM, J, 2W

Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
R2305	QRC121K332Z	C 3.3KOHM, K, 1/2W	R2511	QRD161J222Y	C 2.2KOHM, J, 1/6W
R2306	QVPE805-201H	VARIABLE RESISTOR	R2512	QRD161J223Y	C 22KOHM, J, 1/6W
R2307	QRD161J101Y	C 100 OHM, J, 1/6W	R2513	QRD161J222Y	C 2.2KOHM, J, 1/6W
R2308	QRD161J221Y	C 220 OHM, J, 1/6W	R2514	QVPC611103HZ	VARIABLE RESISTOR
R2311	QRD161J221Y	C 220 OHM, J, 1/6W	R2515	QRD161J682Y	C 6.8KOHM, J, 1.6W
R2312	QRD161J102Y	C 1KOHM, J, 1/6W	R2516	QRV141F2701A	M 2.7KOHM, F, 1/4W
R2313	QVPE805-103H	VARIABLE RESISTOR	R2517	QRV141F6801A	M 6.8KOHM, F, 1/4W
R2314	QRG029J822	M 8.2KOHM, J, 2W	R2518	QRZ00544R7M	F 4.7 OHM, J, 1/4W
R2315	QRC121K332Z	C 3.3KOHM, K, 1/2W	R2519	QRH017J150M	F 15 OHM, J, 1W
R2316	QVPE805-201H	VARIABLE RESISTOR	R2520	QRD161J2R7Y	C 2.7 OHM, J, 1/6W
R2317	QRD161J101Y	C 100 OHM, J, 1/6W	R2521	QRH017J3R3M	F 3.3 OHM, J, 1W
R2318	QRD161J222Y	C 2.2KOHM, J, 1/6W	R2522	QRD161J124Y	C 120KOHM, J, 1/6W
R2321	QRD161J221Y	C 220 OHM, J, 1/6W	R2523	QRD161J154Y	C 150KOHM, J, 1/6W
R2322	QRD161J102Y	C 1KOHM, J, 1/6W	R2524	QRD121J472SY	C 4.7KOHM, J, 1/2W
R2323	QVPE805-103H	VARIABLE RESISTOR	R2525	QRD121J181SY	C 180 OHM, J, 1/2W
R2324	QRG029J822	M 8.2KOHM, J, 2W	R2526	QRD161J391Y	C 390 OHM, J, 1/6W
R2325	QRC121K332Z	C 3.3KOHM, K, 1/2W	R2527	QRD161J151Y	C 150 OHM, J, 1/6W
R2326	QRD161J101Y	C 100 OHM, J, 1/6W	R2528	QRD121J561SY	C 560 OHM, J, 1/2W
R2327	QRD161J101Y	C 100 OHM, J, 1/6W	R2529	QRZ00542R2M	F 2.2OHM, J, 1/4W
R2346	QRC121K474Z	C 470KOHM, K, 1/2W	R2530	QRX019J5R6S	M 5.6 OHM, J, 1W
R2347	QRC121K332Z	C 3.3KOHM, K, 1/2W	R2531	QRG029J331	M 330 OHM, J, 2W
R2348	QRC121K565Z	C 5.6MOHM, K, 1/2W	R2532	QRC019J122S	M 1.2KOHM, J, 1W
R2401	QRD161J153Y	C 15KOHM, J, 1/6W	R2533	QRC019J681S	M 680 OHM, J, 1W
R2402	QRD161J103Y	C 10KOHM, J, 1/6W	R2545	QRD161J102Y	C 1KOHM, J, 1/6W
R2403	QRD161J272Y	C 2.7KOHM, J, 1/6W	R2546	QRD121J153SY	C 15KOHM, J, 1/2W
R2404	QRD161J822Y	C 8.2KOHM, J, 1/6W	R2902	QRF074K3R3	F 3.3OHM K, 7W
R2405	QRD121J121SY	C 120 OHM, J, 1/2W	R2903	QRC039J223	M 22KOHM, J, 3W
R2406	QRD161J473Y	C 47KOHM, J, 1/6W	R2904	QRD121J184SY	C 180KOHM, J, 1/2W
R2407	QRD161J152Y	C 1.5KOHM, J, 1/6W	R2906	QRC029J473	M 47KOHM, J, 2W
R2408	QRD161J103Y	C 10KOHM, J, 1/6W	R2909	QRM059J-R33	M 0.33 OHM, J, 9W
R2409	QRD161J272Y	C 2.7KOHM, J, 1/6W	R2911	QRZ00544R7M	F 4.7 OHM, J, 1/4W
R2410	QRD161J682Y	C 6.8KOHM, J, 1.6W	R2932	QRX019J1R0S	M 1.0 OHM, J, 1W
R2411	QRD161J122Y	C 1.2KOHM, J, 1/6W	R2934	QRD121J272SY	C 2.7KOHM, J, 1/2W
R2412	QRD161J822Y	C 8.2KOHM, J, 1/6W	R2935	QRD121J223SY	C 22KOHM, J, 1/2W
R2413	QRD161J273Y	C 27KOHM, J, 1/6W	R2936	QRD161J223Y	C 22KOHM, J, 1/6W
R2414	QRD161J331Y	C 330 OHM, J, 1/6W	R2938	QRD121J562SY	C 5.6KOHM, J, 1/2W
R2415	QVPC611501HZ	CONTROL 500OHMB	R2940	QRD161J223Y	C 22KOHM, J, 1/6W
R2416	QRD161J0R0Y	C 0 OHM, J, 1/6W	R2941	QRD161J223Y	C 22KOHM, J, 1/6W
R2417	QVPC611501HZ	CONTROL 500OHMB	R2942	QRD161J103Y	C 10KOHM, J, 1/6W
R2418	QRD161J153Y	C 15KOHM, J, 1/6W	R2943	QRD161J333Y	C 33KOHM, J, 1/6W
R2419	QRD161J103Y	C 10KOHM, J, 1/6W	R2944	QRD161J563Y	C 56KOHM, J, 1/6W
R2420	QVPC611102HZ	CONTROL 1KOHMB	R2945	QRD161J683Y	C 68KOHM, J, 1/6W
R2421	QRX019J4R7S	M 4.7OHM, J, 1W	R2946	QRD161J473Y	C 47KOHM, J, 1/6W
R2422	QRD161J103Y	C 10KOHM, J, 1/6W	R2961	QRZ0054180M	F 18 OHM, J, 1/4W
R2423	QRD161J153Y	C 15KOHM, J, 1/6W	R2968	QRC029J471	M 470 OHM, J, 2W
R2424	QRD161J103Y	C 10KOHM, J, 1/6W	R2970	QRD161J151Y	C 150 OHM, J, 1/6W
R2426	QRD121J331SY	C 330 OHM, J, 1/2W	R2973	QRC029J681A	M 680 OHM, J, 2W
R2427	QVPC611501HZ	CONTROL 500OHMB	R2977	QRZ00542R2M	F 2.2OHM, J, 1/4W
R2428	QRD121J331SY	C 330 OHM, J, 1/2W	R2978	QRZ0057825	C 8.2M OHM, J, 1W
R2429	QRD121J102SY	C 1KOHM, J, 1/2W	R2979	QRD161J560Y	C 56 OHM, J, 1/6W
R2430	QRD161J684Y	C 680KOHM, J, 1/6W	R4001	QRSA08J183YL	M 18KOHM, J, 1/10W
R2431	QRD161J823Y	C 82KOHM, J, 1/6W	R4002	QVGA004CB14A	CONTROL 10KOHMB
R2432	QRD161J473Y	C 47KOHM, J, 1/6W	R4003	QRSA08J0R0YL	M 0 OHM, J, 1/10W
R2433	QRD161J564Y	C 560KOHM, J, 1/6W	R4004	QRSA08J222YL	M 2.2KOHM, J, 1/10W
R2434	QRD161J104Y	C 100KOHM, J, 1/6W	R4006	QVPC611103HZ	VARIABLE RESISTOR
R2436	QRD161J473Y	C 47KOHM, J, 1/6W	R4007	QVGA003CB14A	CONTROL 10KOHMB
R2437	QRD161J473Y	C 47KOHM, J, 1/6W	R4008	QRSA08J272YL	M 2.7KOHM, J, 1/10W
R2438	QRD121J222SY	C 2.2KOHM, J, 1/2W	R4009	QRSA08J102YL	M 1KOHM, J, 1/10W
R2439	QRD161J334Y	C 330KOHM, J, 1/6W	R4010	QVGA003CB14A	CONTROL 10KOHMB
R2440	QRD161J334Y	C 330KOHM, J, 1/6W	R4012	QVPC611103HZ	VARIABLE RESISTOR
R2501	QRD161J101Y	C 100 OHM, J, 1/6W	R4013	QRSA08J102YL	M 1KOHM, J, 1/10W
R2502	QRD161J683Y	C 68KOHM, J, 1/6W	R4015	QVPC611103HZ	VARIABLE RESISTOR
R2503	QRD161J472Y	C 4.7KOHM, J, 1/6W	R4016	QRSA08J102YL	M 1KOHM, J, 1/10W
R2504	QRD161J183Y	C 18KOHM, J, 1/6W	R4017	QRSA08J103YL	M 10KOHM, J, 1/10W
R2505	QRD161J153Y	C 15KOHM, J, 1/6W	R4018	QRSA08J222YL	M 2.2KOHM, J, 1/10W
R2506	QRD161J472Y	C 4.7KOHM, J, 1/6W	R4019	QRSA08J393YL	M 39KOHM, J, 1/10W
R2507	QRD161J123Y	C 12KOHM, J, 1/6W	R4020	QVGA003CB14A	CONTROL 10KOHMB
R2508	QRD161J683Y	C 68KOHM, J, 1/6W	R4021	QRSA08J472YL	M 4.7KOHM, J, 1/10W
R2509	QRD161J103Y	C 10KOHM, J, 1/6W	R4022	QVPC611103HZ	VARIABLE RESISTOR
R2510	QVPC611502HZ	CONTROL 5KOHMB			

Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
R4024	QRSA08J0R0YL	M 0 OHM, J, 1/10W	C1108	QETC1CM107Z	E 100UF, M, 16V
R4025	QVGA003CB14A	CONTROL 10KOHMB	C1109	NCT03CH470AY	C 47PF, J, 50V
R4026	QVPC611103HZ	VARIABLE RESISTOR	C1201	NCT03CH680AY	C 68PF, J, 50V
R4027	QRSA08J221YL	M 220 OHM, J, 1/10W	C1202	QETC1CM107Z	E 100UF, M, 16V
R4028	QRSA08J182YL	M 1.8KOHM, J, 1/10W	C1203	QEN61HM105Z	E 1UF, M, 50V
R4029	QVPC6111502HZ	CONTROL 5KOHMB	C1204	NCT03CH181AY	C 180PF, J, 50V
R4031	QRSA08J183YL	M 18KOHM, J, 1/10W	C1205	QEN61CM476Z	E 47UF, M, 16V
R9901	QRC122K105	S 1M OHM, K, 1/2W	C1206	NCT03CH560AY	C 56PF, J, 50V
R9905	QRD161J563Y	C 56KOHM, J, 1/6W	C1207	NCT03CH181AY	C 180PF, J, 50V
R9908	QRD121J101SY	C 100 OHM, J, 1/2W	C1208	QETC1HM105Z	E 1UF, M, 50V
R9910	QRD161J151Y	C 150 OHM, J, 1/6W	C1209	QETC1HM106Z	E 10UF, M, 50V
R9912	QRD161J122Y	C 1.2KOHM, J, 1/6W	C1210	QEN61CM476Z	E 47UF, M, 16V
R9914	QRD161J103Y	C 10KOHM, J, 1/6W	C1211	QETC1HM105Z	E 1UF, M, 50V
R9915	QRD161J472Y	C 4.7KOHM, J, 1/6W	C1212	NCT03CH470AY	C 47PF, J, 50V
R9916	QRD161J822Y	C 8.2KOHM, J, 1/6W	C1213	QETC1HM105Z	E 1UF, M, 50V
R9917	QRD161J122Y	C 1.2KOHM, J, 1/6W	C1214	NCT03CH102AY	C 1000PF, J, 50V
R9918	QRD161J562Y	C 5.6KOHM, J, 1/6W	C1215	QETC1HM105Z	E 1UF, M, 50V
R9919	QRD161J562Y	C 5.6KOHM, J, 1/6W	C1216	QEN61CM476Z	E 47UF, M, 16V
R9952	QRD121J220SY	C 22 OHM, J, 1/2W	C1217	QEN61CM476Z	E 47UF, M, 16V
R9953	QRD161J223Y	C 22KOHM, J, 1/6W	C1218	QETC1HM475Z	E 4.7UF, M, 50V
R9954	QRD161J332Y	C 3.3KOHM, J, 1/6W	C1219	NCT03CH181AY	C 180PF, J, 50V
R9955	QRD161J562Y	C 5.6KOHM, J, 1/6W	C1220	QETC1CM476Z	E 47UF, M, 16V
R9956	QRD121J330SY	C 33 OHM, J, 1/2W	C1221	NCT03CH181AY	C 180PF, J, 50V
R9957	QRD161J103Y	C 10KOHM, J, 1/6W	C1222	QETC1CM107Z	E 100UF, M, 16V
R9958	QVPC611203HZ	VARIABLE RESISTOR	C1223	NCT03CH181AY	C 180PF, J, 50V
R9959	QRD161J103Y	C 10KOHM, J, 1/6W	C1224	NCT03CH181AY	C 180PF, J, 50V
R9960	QRD161J223Y	C 22KOHM, J, 1/6W	C1225	NCT03CH390AY	C 39PF, J, 50V
R9962	QRD161J681Y	C 680 OHM, J, 1/6W	C1226	QAT3110450A	T 45PF 100V
R9963	QRD161J102Y	C 1KOHM, J, 1/6W	C1227	NCT03CH561AY	C 560PF, J, 50V
R9964	QRD161J471Y	C 470 OHM, J, 1/6W	C1228	NCT03CH181AY	C 180PF, J, 50V
R9965	QRD161J103Y	C 10KOHM, J, 1/6W	C1229	NCT03CH181AY	C 180PF, J, 50V
R9966	QRD161J472Y	C 4.7KOHM, J, 1/6W	C1230	QETC1CM107Z	E 100UF, M, 16V
R9967	QRD161J471Y	C 470 OHM, J, 1/6W	C1231	NCB21HK103AY	C 0.01UF, K, 50V
R9972	QRV141F6801A	M 6.8KOHM, F, 1/4W	C1232	QETC1HM475Z	E 4.7UF, M, 50V
R9974	QVPC611202HZ	CONTROL 20KOHMB	C1233	NCT03CH5R0AY	C 5PF, J, 50V
R9975	QRV141F1503A	M 150KOHM, F, 1/4W	C1234	QFV71HJ684MZ	F 0.68UF, J, 50V
R9976	QRD161J682Y	C 6.8KOHM, J, 1.6W	C1301	NCB21HK103AY	C 0.01UF, K, 50V
CAPACITORS			C1302	NCT03CH221AY	C 220PF, J, 50V
C1001	QETC1HM106Z	E 10UF, M, 50V	C1303	QFV71HJ104MZ	P 0.1UF, J, 50V
C1002	QETC1CM107Z	E 100UF, M, 16V	C1305	NCB21HK103AY	C 0.01UF, K, 50V
C1003	QFV71HJ104MZ	P 0.1UF, J, 50V	C1306	NCB21HK103AY	C 0.01UF, K, 50V
C1004	QETC1CM107Z	E 100UF, M, 16V	C1307	NCB21HK103AY	C 0.01UF, K, 50V
C1005	QFV71HJ104MZ	P 0.1UF, J, 50V	C1308	NCB21HK103AY	C 0.01UF, K, 50V
C1006	QETC1CM107Z	E 100UF, M, 16V	C1309	NCB21HK103AY	C 0.01UF, K, 50V
C1007	QFV71HJ104MZ	P 0.1UF, J, 50V	C1311	NCT03CH101AY	C 100PF, J, 50V
C1008	QETC1CM107Z	E 100UF, M, 16V	C1312	QAT3110450A	T 45PF 100V
C1009	QFV71HJ104MZ	P 0.1UF, J, 50V	C1313	QAT3110450A	T 45PF 100V
C1010	QETC1CM337Z	E 330UF, M, 16V	C1314	QAT3110450A	T 45PF 100V
C1011	QFV71HJ104MZ	P 0.1UF, J, 50V	C1315	NCT03CH101AY	C 100PF, J, 50V
C1012	QETC1CM107Z	E 100UF, M, 16V	C1316	NCB21HK103AY	C 0.01UF, K, 50V
C1013	QFV71HJ104MZ	P 0.1UF, J, 50V	C1317	NCT03CH221AY	C 220PF, J, 50V
C1014	QETC1HM105Z	E 1UF, M, 50V	C1318	NCB21HK223AY	C 0.022UF, K, 50V
C1015	NCB21HK103AY	C 0.01UF, K, 50V	C1319	NCT03CH101AY	C 100PF, J, 50V
C1016	QETC1CM337Z	E 330UF, M, 16V	C1320	QETC1HM474Z	E 0.47UF, M, 50V
C1017	QETC1CM337Z	E 330UF, M, 16V	C1321	NCB21HK103AY	C 0.01UF, K, 50V
C1018	QETC1CM476Z	E 47UF, M, 16V	C1322	NCB21HK103AY	C 0.01UF, K, 50V
C1019	QETC1CM337Z	E 330UF, M, 16V	C1323	NCB21HK103AY	C 0.01UF, K, 50V
C1101	QETC1HM475Z	E 4.7UF, M, 50V	C1324	QEN61CM106Z	E 10UF, M, 16V
C1102	NCT03CH181AY	C 180PF, J, 50V	C1325	NCB21HK153AY	C 0.015UF, K, 50V
C1103	QETC1HM475Z	E 4.7UF, M, 50V	C1327	QAT3110450A	T 45PF 100V
C1104	NCT03CH181AY	C 180PF, J, 50V	C1328	NCT03CH220AY	C 22PF, J, 50V
C1105	QETC1CM336Z	E 33UF, M, 16V	C1329	QAT3110450A	T 45PF 100V
C1106	QETC1CM336Z	E 33UF, M, 16V	C1330	NCT03CH220AY	C 22PF, J, 50V
C1107	NCT03CH181AY	C 180PF, J, 50V	C1331	NCT03CH470AY	C 47PF, J, 50V
			C1332	NCB21HK103AY	C 0.01UF, K, 50V
			C1335	NCT03CH561AY	C 560PF, J, 50V
			C1336	QETC1CM337Z	E 330UF, M, 16V
			C1337	NCB21HK103AY	C 0.01UF, K, 50V
			C1338	NCT03CH220AY	C 22PF, J, 50V

Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
C1339	NCB21HK103AY	C 0.01UF, K, 50V	C2504	QETC1HM105Z	E 1UF, M, 50V
C1340	NCT03CH390AY	C 39PF, J, 50V	C2505	QFP31HJ332SZ	P 3300PF, J, 50V
C1341	NCT03CH390AY	C 39PF, J, 50V	C2506	QFLC1HJ222MZ	M 2200PF, J, 50V
C1342	NCT03CH390AY	C 39PF, J, 50V	C2507	QETC1AM107Z	E 100UF, M, 10V
C1343	NCT03CH390AY	C 39PF, J, 50V	C2508	QFV71HJ474MZ	F 0.47UF, J, 50V
C1344	NCT03CH151AY	C 150PF, J, 50V	C2509	QCS31HJ121AZ	C 120PF, J, 50V
C1601	QETC1HM105Z	E 1UF, M, 50V	C2510	QFLC1HJ123MZ	M 0.012UF, J, 50V
C1602	QETC1HM105Z	E 1UF, M, 50V	C2511	QETC1CM337Z	E 330UF, M, 16V
C1603	NCT03CH390AY	C 39PF, J, 50V	C2512	QFLC1HJ393MZ	M 0.039UF, J, 50V
C1604	NCT03CH390AY	C 39PF, J, 50V	C2513	QFLC1HJ152MZ	M 1500PF, J, 50V
C1605	NCT03CH181AY	C 180PF, J, 50V	C2514	QCS31HJ151AZ	C 150PF, J, 50V
C1606	NCT03CH181AY	C 180PF, J, 50V	C2515	QETC1VM107Z	C 100PF, M, 35V
C1608	QETC1HM105Z	E 1UF, M, 50V	C2516	QCY32HK102R	C 1000PF, 500V
C1609	QETC1CM337Z	E 330UF, M, 16V	C2517	QETC1EM477Z	E 470UF, M, 25V
C1610	NCT03CH102AY	C 1000PF, J, 50V	C2518	QCY32HK102R	C 1000PF, 500V
C1611	QETC1HM476Z	E 4.7UF, M, 50V	C2519	QETB1VM108	E 1000PF, M, 35V
C1612	QETC1HM106Z	E 10UF, M, 50V	C2520	QFV71HJ124MZ	F 0.12UF, J, 50V
C1613	QEH1EM108MZ	E 1000UF, M, 25V	C2521	QETC1CM476Z	E 47UF, M, 16V
C1614	QETC1AM337Z	C 330UF, M, 10V	C2522	QETC1CM477Z	E 470UF, M, 16V
C1615	NCS21HJ391AY	C 390PF, J, 50V	C2523	QCY32HK102R	C 1000PF, 500V
C1616	NCS21HJ391AY	C 390PF, J, 50V	C2524	QETC1HM474Z	E 0.47UF, M, 50V
C1617	NCB21HK473AY	C 0.047UF, K, 50V	C2525	QFLC1HJ473MZ	M 0.047UF, J, 50V
C1801	QETC1CM107Z	E 100UF, M, 16V	C2526	QETC1HM106Z	E 10UF, M, 50V
C1802	NCT03CH181AY	C 180PF, J, 50V	C2527	QFLC2AK472MZ	M 4700PF, K, 100V
C1803	NCB21HK102AY	C 1000PF, K, 50V	C2528	QFLC2AK822MZ	M 8200PF, K, 100V
C1804	QETC1HM105Z	E 1UF, M, 50V	△ C2530	QFZ01173801S	P 3800PF, 1.4KV
C1805	NCT03CH181AY	C 180PF, J, 50V	C2531	QFM72DK103M	M 0.01UF, K, 200V
C1807	QFV71HJ334MZ	P 0.33UF, J, 50V	C2532	QFLC2AK563MZ	M 0.056UF, K, 100V
C1808	QETC1HM336Z	E 3.3UF, M, 50V	C2533	QETC2EM106	E 10UF, M, 250V
C1809	NCB21HK472AY	C 4700PF, K, 50V	C2534	QFZ0119224S	P 0.22UF, 200V
C1810	NCB21HK102AY	C 1000PF, K, 50V	△ C2907	QCZ9034-472A	CERAMIC CAP
C1811	NCT03CH221AY	C 220PF, J, 50V	△ C2908	QCZ9034-472A	CERAMIC CAP
C1812	NCT03CH102AY	C 1000PF, J, 50V	△ C2909	QCZ9034-472A	CERAMIC CAP
C1813	NCB21HK153AY	C 0.015UF, K, 50V	△ C2910	QCZ9034-472A	CERAMIC CAP
C1814	NCB21HK222AY	C 2200PF, K, 50V	C2911	QEZ0199227R	E 220UF, 200V
C1815	NCT03CH101AY	C 100PF, J, 50V	C2912	QCF22HP103M	C 0.01UF, P, 500V
C1816	NCT03CH470AY	C 47PF, J, 50V	C2913	QCZ0122271U	C 270PF, K, 2KV
C1817	NCT03CH390AY	C 39PF, J, 50V	C2916	QCZ0122151U	C 150PF, K, 2KV
C1818	NCT03CH101AY	C 100PF, J, 50V	C2918	QCY32HK471RZ	C 470PF, K, 500V
C1819	QEN61CM476Z	E 47UF, M, 16V	C2923	QETC1EM227Z	E 220PF, M, 25V
C1820	NCT03CH560AY	C 56PF, J, 50V	C2931	QCY32HK681MZ	C 680PF, K, 500V
C1821	NCT03CH101AY	C 100PF, J, 50V	C2932	QETC1HM476Z	E 47UF, M, 50V
C1822	NCB21HK562AY	C 5600PF, K, 50V	C2934	QCZ0122561A	C 560PF, K, 2KV
C1823	NCT03CH102AY	C 1000PF, J, 50V	C2936	QEZ0203107	E 100UF, 160V
C2303	QCS31HJ331AZ	C 330PF, J, 50V	C2937	QETC1CM107Z	E 100UF, M, 16V
C2304	QCS31HJ391AZ	C 390PF, J, 50V	C2938	QFM72DK473M	M 0.047UF, K, 200V
C2305	QCS31HJ561AZ	C 560PF, J, 50V	C2939	QETC1CM476Z	E 47UF, M, 16V
C2306	QEH1EM105MZ	E 1UF, M, 250V	C2940	QEZ0203107	E 100UF, 160V
C2307	QCZ0121-102M	C 1000PF, P, 3KV	C2954	QETC1HM335Z	E 3.3UF, M, 50V
C2309	QEH1EM475MZ	E 4.7UF, M, 250V	C2959	QFV71HJ224MZ	P 0.22UF, J, 50V
C2310	QEH1CM107MZ	E 100UF, M, 16V	C2961	QCY31HK332AZ	C 3300PF, K, 50V
C2402	QFLC1HJ103MZ	M 0.01UF, J, 50V	C2962	QETB1HM227	E 220UF, M, 50V
C2403	QETC1HM105Z	E 1UF, M, 50V	C2965	QEM51EM337M	E 330UF, M, 25V
C2404	QFLC1HJ682MZ	M 6800PF, J, 50V	C2966	QETC1CM227Z	E 220UF, M, 16V
C2405	QETC1CM337Z	E 330UF, M, 16V	C2968	QFLC1HJ472MZ	M 4700PF, J, 50V
C2407	QEE61VK105BZ	T 1UF, 35V	C4001	QER51CM226M	E 22UF, M, 16V
C2408	QFLC1HJ223MZ	M 0.022UF, J, 50V	C4002	QFV71HJ104MZ	P 0.1UF, J, 50V
C2409	QFLC1HJ103MZ	M 0.01UF, J, 50V	△ C9901	QFZ9036473M	P 0.047UF, 250V
C2410	QFLC1HJ103MZ	M 0.01UF, J, 50V	△ C9902	QFZ9036473M	P 0.047UF, 250V
C2411	QETC1HM225Z	E 2.2UF, M, 50V	△ C9904	QCZ9033472A	C 4700PF, M, 125V
C2412	QCY32HK471RZ	C 470PF, K, 500V	△ C9905	QCZ9033472A	C 4700PF, M, 125V
C2413	QETC1HM107Z	E 100UF, M, 50V	△ C9906	QCZ9033472A	C 4700PF, M, 125V
C2414	QFLC1HJ223MZ	M 0.022UF, J, 50V	C9917	QFLC1HJ562MZ	M 5600PF, J, 50V
C2415	QETC1HM106Z	E 10UF, M, 50V	C9919	QETC1EM476Z	E 47UF, M, 25V
C2416	QETC1EM477Z	E 470UF, M, 25V	C9920	QFLC1HJ272MZ	M 2700PF, J, 50V
C2417	QETC1CM226Z	E 22UF, M, 16V	C9921	QFLC1HJ332MZ	M 3300PF, J, 50V
C2419	QCS32HJ470AZ	C 47PF, J, 500	C9922	QCS31HJ821AZ	C 820PF, J, 50V
C2501	QETC1HM106Z	E 10UF, M, 50V	C9924	QETC1HM105Z	E 1UF, M, 50V
C2502	QFLC1HJ563MZ	M 0.056UF, J, 50V	C9925	QETC1EM476Z	E 47UF, M, 25V
C2503	QFLC1HJ682MZ	M 6800PF, J, 50V	C9926	QFLC1HJ122MZ	M 1200PF, J, 50V

	Ref. No.	Part No.	Description		Ref. No.	Part No.	Description
	C9951	QETC1HM336Z	E 33UF, M, 50V		W4013	QRSA08J0R0YL	M 0 OHM, J, 1/10W
	C9952	QETC1CM337Z	E 330UF, M, 16V		W4014	QRSA08J0R0YL	M 0 OHM, J, 1/10W
	C9953	QETC1VM106Z	E 10UF, M, 35V		W4015	QRSA08J0R0YL	M 0 OHM, J, 1/10W
	C9955	QETC1CM107Z	E 100UF, M, 16V		W4016	QRSA08J0R0YL	M 0 OHM, J, 1/10W
	C9956	QFV71HJ474MZ	F 0.47UF, J, 50V		W4017	QRSA08J0R0YL	M 0 OHM, J, 1/10W
	C9957	QFLC1HJ123MZ	M 0.012UF, J, 50V		W4020	QRSA08J0R0YL	M 0 OHM, J, 1/10W
	C9958	QETC1HM106Z	E 10UF, M, 50V		W4024	QRSA08J0R0YL	M 0 OHM, J, 1/10W
	C9963	QFV71HJ105MZ	F 1UF, J, 50V		W4025	QRSA08J0R0YL	M 0 OHM, J, 1/10W
	C9966	QFM72DK822M	M 8200PF, K, 200V		W4026	QRSA08J0R0YL	M 0 OHM, J, 1/10W
	C9967	QETC1HM476Z	E 47UF, M, 50V		W4027	QRSA08J0R0YL	M 0 OHM, J, 1/10W
	C9969	QFLC1HJ562MZ	M 5600PF, J, 50V		W4028	QRSA08J0R0YL	M 0 OHM, J, 1/10W
	C9970	QCS31HJ471AZ	C 470PF, J, 50V		W4029	QRSA08J0R0YL	M 0 OHM, J, 1/10W
					W4030	QRSA08J0R0YL	M 0 OHM, J, 1/10W
					W4031	QRSA08J0R0YL	M 0 OHM, J, 1/10W
					W4032	QRSA08J0R0YL	M 0 OHM, J, 1/10W
					W4033	QRSA08J0R0YL	M 0 OHM, J, 1/10W
					W4034	QRSA08J0R0YL	M 0 OHM, J, 1/10W
					X1301	CE40749-001	CRYSTAL
					X1302	CE40668-001	CRYSTAL
		OTHERS					
△	CP2931	ICP-N38-Y	IC SOCKET				
△	F2951	QMF51E2-4R0S	FUSE 4.0A				
△	F9901	QMF51E23R15S	FUSE 3.15A				
	J1001	QMC0503-C01	DIN JACK				
	J1101	CEMB021-001	BNC CONNECTOR (VIDEO A)				
	J1102	CEMB021-001	BNC CONNECTOR (VIDEO B)				
	J1201	QMC0004-C01	DIN JACK (Y/C IN)				
	J1202	QMD2B04-001	CONNECTOR (Y/C OUT)				
	J1601	CEMN036-005	PIN JACK (AUDIO)				
	J1801	CEMB021-001	BNC CONNECTOR				
△	J9901	QMCB006-C01	AC INLET				
	K2401	CE41433-001Z	BEAD CORE				
	K2402	CE41433-001Z	BEAD CORE				
	K2901	CE42050-001Z	CORE				
	K2903	CE42050-001Z	CORE				
	K2904	CE41433-001Z	BEAD CORE				
	K2931	CE42050-001Z	CORE				
	K2933	CE42050-001Z	CORE				
△	LF9901	CELF006001J1	FILTER				
△	PC2901	CNY17F-C1	PHOTO COUPLER				
	RTL	FX-1089B	CIRCUIT BOARD (SIGNAL)				
	RTL	FX-2050A	CIRCUIT BOARD (MAIN, CRT SOCKET)				
	RTL	FX-4044A	CIRCUIT BOARD (CONTROL)				
	RTL	FX-4045A	CIRCUIT BOARD (TALLY)				
	RTL	FX-9048A	CIRCUIT BOARD (SUB POWER)				
	RTL	FX-9051A	CIRCUIT BOARD (POWER SW1)				
	RTL	FX-9052A	CIRCUIT BOARD (POWER SW2)				
	RTL	FX-9054A	CIRCUIT BOARD (SUB POWER 2)				
△	RY2951	CESK028-001	RELAY				
	S1001	QSS1F22-C07	SLIDE SWITCH				
	S1201	QSTQ101-C02	SWITCH				
	S1301	QSL4A13-C03Z	SWITCH				
	S1302	QSL4A13-C03Z	SWITCH				
	S2501	QSL4A13-C03Z	SWITCH				
	S2502	QSL4A13-C03Z	SWITCH				
	S4001	QSW0379-001	SWITCH				
	S4002	QSW0379-001	SWITCH				
△	S9901	QSW0380-001	POWER SWITCH				
△	SK2001	CE42554-001	CRT SOCKET				
△	TH1001	ERTD2ZHL503S	THERMISTOR				
△	TH2901	CEKP003-001	THERMISTOR				
△	VA9901	ERZV10V621CS	VARISTOR				
	W4001	QRSA08J0R0YL	M 0 OHM, J, 1/10W				
	W4002	QRSA08J0R0YL	M 0 OHM, J, 1/10W				
	W4003	QRSA08J0R0YL	M 0 OHM, J, 1/10W				
	W4004	QRSA08J0R0YL	M 0 OHM, J, 1/10W				
	W4005	QRSA08J0R0YL	M 0 OHM, J, 1/10W				
	W4006	QRSA08J0R0YL	M 0 OHM, J, 1/10W				
	W4007	QRSA08J0R0YL	M 0 OHM, J, 1/10W				
	W4008	QRSA08J0R0YL	M 0 OHM, J, 1/10W				
	W4009	QRSA08J0R0YL	M 0 OHM, J, 1/10W				
	W4012	QRSA08J0R0YL	M 0 OHM, J, 1/10W				

